

AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, EDITOR.]

SATURDAY, APRIL 5, 1834.

[VOLUME III.—No. 13.]

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, APRIL 5, 1834.

The writer of the following letter will excuse us, we trust, for publishing it without his consent. The truth is, we are driven, these hard times, to adopt all honorable means in our power to extend its circulation, that we may receive back the money it has cost us. If we can do that, by a collection of what is now due from those who have heretofore taken it, the sale of copies now on hand, and an extension of its circulation, we will never say a word more about having thus far received no compensation for our own services in superintending it. One cannot afford to work for nothing unless his expenses are defrayed: and we should not have been obliged to do so, if all who have patronized, had paid us.

LIVERPOOL, Feb. 20th, 1834.

SIR,—I am requested by Mr. Vignoles to subscribe for a set of the Railroad Journal, with the back numbers complete, for the Institute of Civil Engineers in London, and another for the Board of Public Works of Dublin, which may both be sent as you have hitherto sent his copies. He says they will all prefer having them in semi-monthly parts, stitched in a wrapper, as you have sometimes sent them; I should also prefer mine in that way. I have, likewise, at the solicitation of Doctor Lardner, to ask you to send two copies of all the back numbers, and to continue him as a subscriber. On seeing my copy, he expressed the utmost astonishment that such a work should be published in America, and I dare say he will be the means of your procuring additional subscribers. You will please to forward me your bill, which shall be immediately paid.

Your obedient servant,

FRANCIS B. OGDEN,
Consul of the U. S. at Liverpool.

ERIE AND KALAMAZOO RAILROAD.—We are happy to learn by the following letter from one of the commissioners, that \$48,000 of the capital stock of this company has been taken, leaving but forty shares of \$50 each, to make up the full amount necessary to make a good wooden railroad from Port Lawrence to Adrian.—[Miami of the Lakes.]

“ADRIAN, March 6, 1834.

“The books for receiving subscriptions to the capital stock of the Erie and Kalamazoo Railroad Company were opened here as per notice, on the 4th instant. On that and the following day there were 960 shares subscribed, which is \$48,000. The stock finds a more ready market than was anticipated by the warmest advocate of the road. This tells well for the intelligence and enterprise of the inhabitants of the counties of Lenawee and Monroe. People of every profession, trade, and business, have taken stock. Can there be any doubt that a railroad will be built, when so many unite their strength and say *it shall go on*? Your favorite theory of wooden railroads will therefore soon be put in practice.”

By a gentleman of this place, recently from Columbus, we are informed that the Wabash and Erie Canal bill had a few days before the time of adjournment been passed by the House and sent to the Senate, where, after some trifling amendments, it also passed, and that there was no doubt that the Senate's amendment would be concurred in by the House without opposition. The bill, as we are informed verbally, provides for the immediate survey by engineers, under the direction of the Commissioners, of both banks of the river from the Indiana line to the foot of the rapids, and also an examination of the bed of the river as low down as the head of the rapids, with a view to a slack water navigation, if it should be deemed expedient.

Three gentlemen to be appointed by the governor, to select and appraise the lands belonging to the canal, which lands are to be brought into market as early as practicable, and sold for cash, provided that none shall be struck off at a less price than \$2 50 per acre, nor less than its appraised value; and no canal land can be entered at private sale until two public sales shall have been held. The proceeds of these sales are to be applied without unnecessary delay to the construction of the canal.

It is expected that the engineers will be on the route as soon as the ground is well settled.

We shall publish the canal bill as soon as we have the good fortune to lay our hands on it.—[Miami of the Lakes.]

Internal Improvements, No. V. By F. To the Editor of the American Railroad Journal, and Advocate of Internal Improvements.

SIR,—Animated discussions have at various times taken place, in relation to the particular plan that is best adapted as a general means to promote and facilitate internal commerce; and although systems have been explained, and theories investigated, in the most lucid and elaborate manner, they have been too frequently characterized by party influence, to produce any other effect than that of exciting animosities to the prejudice of the true interest of the cause.

It is not believed that any one particular plan can with propriety be recommended as most fit to subservise the general interest of the country. The circumstances which should govern the mind in the choice and adoption of such plan are principally of a local character, and entirely independent of general rules. Canals, railways, turnpikes, have each their particular province, their particular sphere of action. Each, according to circumstances, possesses, relatively, certain capabilities and advantages, for which it claims precedence over the other two; and for which alone it should be selected as most likely to conduce to the improvement of the section of country it may be intended to benefit.

One of the main causes of error, and one that has been productive of more injury than any other, may be traced to the prejudice that has so unreasonably existed in the minds of the people, against the employment of men of science in the construction of important public works. It is disgraceful to find the interests of men of this class, even when possessing a large share of practical knowledge, prejudiced by the very thing which ought, in the eyes of an enlightened community, to have advanced them; to find their services slighted and put aside to give place to those who, professing to act independently of all theory and scientific principle, and ignorant of every thing except the few practical rules indispensable in their vocations, happen to enjoy the unenviable distinction of being mere practical men. It is only by the lights of science that we can ever hope to estimate with any degree of accuracy the combined actions of different causes, and by a correct knowledge of its principles that we can avoid making improper applications

of established laws, and be enabled to draw legitimate conclusions from particular premises. It is not imagined by any reflecting person that knowledge of this kind can possibly militate against a correct conception of plans, and a judicious arrangement of details. Were it reasonable to suppose, even for a moment, the encouragement of any such ridiculous notions, many convincing instances might be adduced as evidence to maintain the contrary position,—that without its assistance no engineer can hope to attain to eminence in his profession. Prony, Tredgold, and Smeaton, were all, in some sense, practical men; but to an extensive practice they united a profound knowledge of all the different branches of mechanical science; and who have contributed more than they to the general diffusion of knowledge, under the different heads to which their attention was directed. We are persuaded that it is only from the exertions of such men (and many such may be found in this country), that we can possibly escape falling into the snares that are laid by designing men to dupe the unwary.

So much has already been written on the relative value of railroads and canals, that the subject is indeed well nigh exhausted; and although little or nothing, it is believed, can be adduced further to strengthen our position, but what has been hundreds of times reiterated from every quarter of the Union, still it cannot be passed by, consistently with the object in view and in justice to the cause we uphold, without a brief notice of some of the characteristics by which these formidable rivals, if such they must be considered, are chiefly governed. That of friction, as it has proved a fruitful source of disputation among theorists, claims particular attention, as the basis on which most of the arguments are founded; and although the experiments from which our information on this important topic is derived have been conducted with the greatest care and precision, the results differ so widely in character, and present so many material opposing points, that the laws established from the conclusions drawn from the one have ever been invalidated by those drawn from the other. It was long looked upon as a fundamental principle, that *the friction of rolling and sliding bodies was the same for all velocities*, and consequently, that any body being acted on by a constant force barely sufficient to overcome its friction, together with the resistance of the atmosphere, would, like a falling body acted on by gravitation, proceed with a motion continually accelerated, and increase beyond any assignable limit. However startling this assertion may have been at its first appearance, it yet found many to countenance its introduction, and claim its admission as a truth deserving unlimited credit. Here was a fine field for speculation; and to this apparent paradox may be traced the fountain head from which has emanated all the enthusiastic hopes and extravagant expectations which have characterized the railroad mania during the last few years. Fortunately, however, for the cause of science, men have been found sufficiently sceptical to question the truth of this absurd position. Morin, satisfied in his own mind, that his predecessors, Vince and Coulomb, had been laboring under the effect of some undefinable error, determined to sift the matter until he discovered the cause. Having prepared an apparatus for this purpose, he varied the velocity from the lowest up to ten feet per second; the rubbing surfaces from some tenths of a square inch to nearly five hundred square inches; and the pressures from ninety to twenty-five hundred pounds. All the experiments made within these limits, and they were repeated many times, agree in character, and prove, what is more consistent with our ideas, and reconcileable with our experience, that the friction of surfaces moving on each other is *entirely independent both of velocity and surface, and proportionable to the pres-*

sure. In this experiment, of course, the opposing resistance of the medium through which the body passes is abstracted.

These practical results were still, however, highly satisfactory, as placing the ability to propel carriage on railroads at a suitable speed, for the more rapid dispatch of business, beyond a doubt; and as showing the striking relative difference in the force requisite to produce the same degree of speed upon canals. But before going further, let us examine a little into the nature of this latter resistance. We find this to be governed by totally different laws: that it increases with the square of the velocity. It is the resistance of the medium through which the body passes, and is occasioned by two causes,—the cohesion of the particles and the inertia of matter. Thus, if a body move through a fluid at different velocities, the resistance will increase with the increased number of particles struck in a given time; which, of course, will be determined by the space run through in that time. If, therefore, a triple number of particles be struck, the resistance will be triple; but it increases further with the force with which the body strikes the particles, and this being proportional will be also at a triple rate, making the whole resistance nine-fold: i. e., partly in the ratio of the velocity, and partly in the duplicate ratio of that velocity.

The only apology offered for these tedious and uninteresting details, is the circumstance of their being addressed to the unenlightened—to those whose occupations may preclude them from bestowing much care and reflection upon subjects of this character. It is a desideratum admitted by all who have the interest of the country at heart, that a correct knowledge of fundamental principles be so generally diffused throughout every class of society, that each and every individual member thereof may be enabled of himself to pass judgment on the relative merits and demerits of the various schemes presented for public approbation; and to detect the fallacies of those whose wilful misrepresentations have so often before led into error. Almost every instance that has occurred where serious injury has resulted from ill-advised and ill-concerted undertakings, has been characterized by a total ignorance of the commonest rules of hydro-dynamics. Many unhappy examples might be adduced to illustrate this observation, but we forbear, in the hope that the experience derived from the past will so regulate the actions of the future as to render their recurrence, unless wilful, next to impossible.

But to return to our subject. It appears from the different nature of these resistances, that the rate of velocity on canals is confined to a very low limit, whereas the rate of that on railroads may be increased to any height that will not prove injurious to the road and carriage. On the other hand, however, it is to be remarked that this very principle, which is harped on as an insuperable objection to the further use of the canal, actually endows it with advantages that are altogether unattainable on railroads. We shall endeavor to explain this in as few words as possible. The relative good effect produced at different velocities, in round numbers, stands very nearly thus: One to three in favor of canals at a velocity of two and a half miles per hour; equal at a velocity of five miles per hour; and one to three in favor of railroads at a velocity of ten miles per hour. Now, reasoning from these premises it can be made to appear that a force of traction on a canal equal to one hundred pounds, will be amply sufficient to move a mass equal to ninety thousand pounds. A horse traveling at the slow rate of two miles per hour can draw with ease thirty tons in a boat weighing fifteen tons. This gives us at once a proportion of one to nine hundred as the amount of resistance opposed to the motion of a vessel through the water at two miles per hour. Now, reducing this velocity to one mile per

hour, the proportion becomes one to three hundred and sixty; and if to a half a mile per hour, one to fourteen hundred and forty; or, in other words, a traction equal in force to 100 lbs. can thus at that rate draw a mass of the enormous weight of 1,444,000 lbs. This astonishing fact does not only exist in theory, but has actually been proved in practice, upon our own lakes. A single horse has been known to draw, at the rate of one mile per hour, a raft weighing two hundred tons. F.

Farther Illustration of the Principle of Mr. Ericsson's Caloric Engine. [From the London Mechanics' Magazine.]

SIR,—The following remarks, in elucidation of the principle of my Caloric Engine, will, I feel confident, not be unacceptable to your many scientific readers.

To arrive at a clear understanding of the advantage gained by the new mode of employing heat adopted in this engine, it may not be amiss to pause for a moment to consider how heat is at present made use of when employed to actuate that universal instrument of mechanical power, the steam engine. Is it necessary to the effect produced, that the heat should be absorbed or destroyed, or in any way diminished in energy? If this question can be answered in the negative, then it will be quite logical to assume that the power of the steam engine forms but a fraction of that which the combustion of a given quantity of fuel is capable of producing.

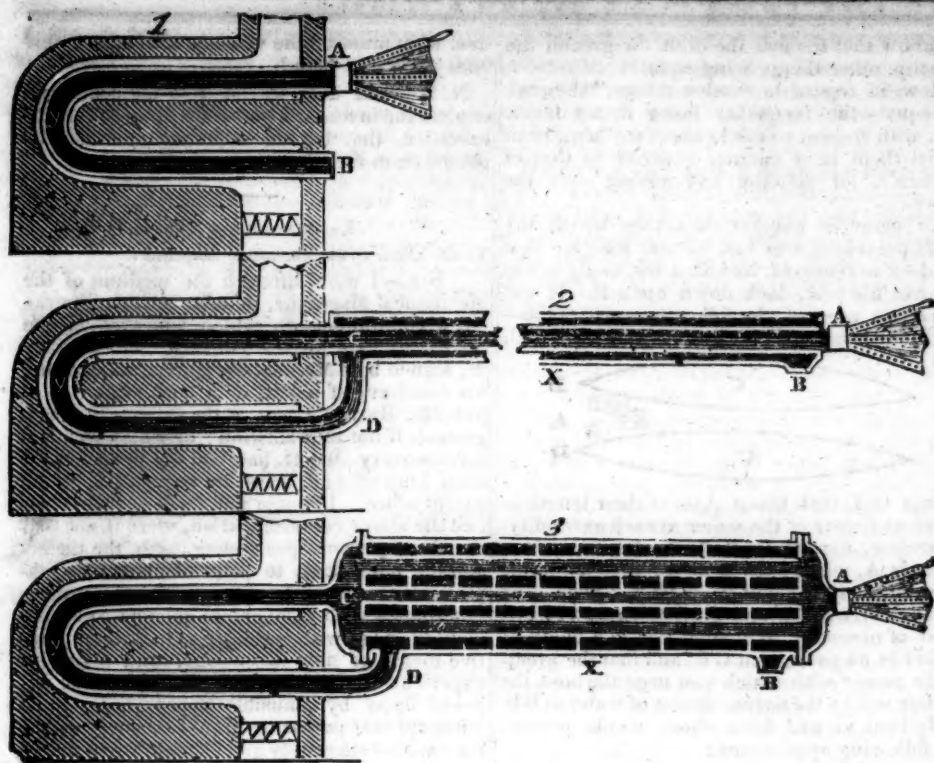
Well, then, let us suppose a quantity of steam, of known volume and pressure, to be admitted into a vessel containing cold water of a given weight and temperature; the elevation of temperature which will be produced will, of course, afford an accurate measure of the quantity of heat contained in the steam previous to its condensation. Suppose, now, that an equal volume of steam, of equal pressure, as in the first instance, is admitted under a piston, working in a cylinder, and subjected to a proportionate load; that piston will, of course, move until all the steam has been admitted, and by its motion exert a force proportionate to the pressure of the steam and the volume displaced. Let, then, the steam be discharged from under the piston into the vessel of cold water, under similar circumstances as in the first supposition, and it will be found that the *same* elevation of temperature will take place as when the steam was not previously employed to raise the piston. We thus find that *the production of mechanical force by heat is unaccompanied by any loss of heat.**

But, in the steam engine, this remarkable circumstance is not productive of any advantage, for although nearly all the heat generated in the boiler is unquestionably conducted to the condenser, that heat cannot from thence be brought back to the boiler again for the purpose of raising steam, having in the condensing process been diffused amongst a large quantity of matter, and brought to a much lower temperature than the steam.†

On these grounds the inference seems incontestible, that the steam engine is not constructed on a correct physical principle, inasmuch as it consumes a greater quantity of that precious commodity, fuel, than is neces-

* Losses by radiation need not here be taken into account, for they do not affect the theory.

† Of course, every boiler is fed from the condenser, but this produces a saving of fuel of only one-thirteenth part of the whole quantity consumed: hence thirteen-fourteenths of the heat generated is constantly wasted.



sary for the production of the mechanical force obtained.

It is well known that all fluid substances, the gases particularly, expand very considerably by being exposed to the action of heat, and that, if kept in a state of compression previous to being heated, their expansive force will, at a given temperature, be greater, and that in the same proportion as the increase of density. That an engine might be worked by means of such expansion or dilatation, will be readily admitted by any one reflecting on the subject, without referring to the diagram or sketch of the Caloric Engine, given in a recent number of your Magazine. I will, therefore, not detain your readers by detailing the manner in which the motion is practically produced by the dilatation of the heated medium, but confine myself to the theory of the contrivance, by which a nearly unlimited quantity of the impelling medium, (gaseous or fluid,) may be heated to any required temperature, by the consumption of a small quantity of fuel.*

Let fig. 1 (see the accompanying engraving) represent a furnace having a metal tube, y, conducted through the centre of its flue, to be acted on by the heat in its passage to the chimney; let a pair of bellows be attached to the pipe, y, at A, for the purpose of keeping up a constant current of air through that pipe; and let a thermometer be inserted into it at A, and another thermometer at B. Now, suppose a regular fire to be kept up, and the bellows to be regularly worked so as to blow, say 20 cubic feet of cold air into the pipe y per minute: if it then be found that, whilst the thermometer at A indicates 60°, the thermometer at B will continue to indicate 100°, it follows, as a matter of course, that the heat transmitted

by the furnace per minute will be accurately ascertained by calculating what quantity of heat is required to raise 20 cubic feet of air from 60 up to 100°. Now suppose the same furnace, with its metal tube y, to be represented by fig. 2, but instead of having the bellows attached to the metal tube, suppose them to be attached to a pipe, A C, of infinite length, and let this pipe be inclosed in a casing, X; suppose, further, this casing to be surrounded by a perfect non-conductor of heat, and instead of allowing the hot air to pass off directly, as at B in fig. 1, let it be conducted from the metal tube y, through the pipe D, into the casing X, and pass off at B. Then let thermometers be inserted in the pipes at A, C, D, and B, the bellows being worked at the same speed as before, and an equal fire kept up. At the commencement, the thermometer at A and at C will, of course, both indicate 60°, but the thermometer at C will very soon begin to rise, on account of the heat conveyed into the casing X; but any increase of temperature at C will, of course, cause an increase of temperature at D. This again will still further increase the temperature at C, and so on in continued succession, until the thermometer at D indicates a temperature nearly equal to that of the hot air in the beginning of the flue leading from the furnace: any further increase of temperature, of course, cannot take place. Now, since the quantity, or rather weight, of air forced through the metal tube y is the same as in the first proposition, and the power of the fire likewise, this latter proposition, illustrated by fig. 2, incontrovertibly proves that the temperature to which the air may be brought is made perfectly independent of the quantity of heat generated in the furnace.

But the quantity of air to be heated will also be equally independent of the quantity of heat generated: for suppose that, in the first proposition, the draught be checked so as to diminish the consumption of fuel $\frac{1}{2}$, then the 20 cubic feet of air constantly circulated per minute will be raised about 10°, instead of 40°; but apply the contrivance for bringing the heat back, as illustrated in

fig. 2, and the thermometers at C and D will be affected just as above described, except that more time will be required before the temperature at D is brought to the full height, and that less heat will ultimately escape at B. Thus it may be proved *theoretically*, that any quantity of fluid air or gaseous matter can be heated up to a high temperature, independently of the quantity of heat actually generated for that purpose. Although this is apparently a paradox, it is not so; for by referring to the illustration in figs. 2 and 3, it will at once be seen that the circulating fluid is of a high temperature only when passing the point D, and that it gradually diminishes in temperature as it recedes, and gradually increases as it advances towards that point. However, for the purpose of obtaining mechanical force this is quite as advantageous as if the fluid retained its high temperature when it escapes; for at the point D is the heated fluid admitted into the working cylinder, and from thence passed off into the casing X. The manner in which this is done, your diagram of the Caloric Engine, in a former number, fully explains.

Fig. 3 represents the form of an apparatus used in practice; its operation is precisely the same as in fig. 2, and thermometers placed at A, C, D, and B, will indicate temperatures proving the increase of temperature and transfer of heat in a similar manner. The cold fluid is forced into the furnace through a number of small tubes, Z, and the hot air is passed off through the vessel X, called the regenerator. The currents, both in this vessel and in the tubes, are broken in a peculiar manner, so as to produce a constant intermixture of particles, which is absolutely necessary for effecting a rapid transfer of heat. But to such an extent has this object been attained by the contrivances instituted, that hot air, constantly passed at the rate of 6 feet per second, through a pipe $1\frac{1}{2}$ inch bore, fourteen feet long, and entering at a temperature of 300°, has, by a counter-current of equal magnitude, been brought down to 85°, the counter-current at the same time entering at 72°.

I remain, sir, yours, &c.

J. ERICSSON.

Edward st., Regent's Park, Jan. 7, 1834.

[From the Mechanics' Magazine.]

We have received the following communication from the agent of Mr. Harris, respecting his invention, and on the same day the letter from our friend Archimedes. We have often stated that our columns are open to controversy on scientific subjects, if conducted without personalities, and we cheerfully insert both articles. We hope to receive other letters on the same subject.—[ED. MEC. MAG.]

Harris' new Patent Twin Steamboat. To the Editor of the Mechanics' Magazine.

SIR,—In requesting the favor of you to give Mr. Harris' communication a place in your columns, I beg leave to say that I am only discharging the duty of an agent, without the remotest wish or desire to injure Mr. Burden.

There has not been a dissenting opinion among all those with whom I have consulted, and shown Harris' plans, and some of them are well qualified to judge, that it is superior to any thing yet discovered for velocity.

His invention admits of many advantages not enumerated in the following letter. Among them are, security of the inner wheels in a heavy sea, double wheels for river navigation, &c. A model of the construction may be seen at

* The journal cited in my last communication having, by some strange oversight, mistaken the Caloric Engine for an "Air Engine," it will be well to direct the attention of your readers to the fact, that various gaseous and even fluid substances, capable of considerable dilatation by heat, are equally applicable for using the heat over and over again, and for the reason that the impelling agent may be varied, while, in every case, caloric is indispensable, has the term Caloric Engine been chosen.

my office, where I invite capitalists and others to come and judge for themselves.

D. MALLORY, Chester's Buildings,
No. 1 Dry street.

D. MALLORY, Esq.:

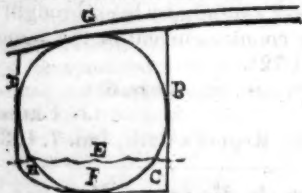
SIR,—Having for some months past observed in the papers notices of "Burden's Steamboat," and of the very great velocity with which she is expected to move, I was induced to institute a comparison between his construction and one which I invented, and have secured in the patent office at Washington; and the result is, that a boat built on my plan must move with greater velocity.

If I can establish the fact—which is the object of this communication—that a boat constructed on my plan, of equal length, and of as much weight as his, possessing a form calculated to move with less obstruction from the water, and to draw considerably less water than his, it must be manifest that my plan is superior, and must supersede his.

Before entering upon a comparison of the two plans, it is necessary that I should give you an idea of the form of my boat. You have only to imagine a boat *extremely long, very narrow*, with a flat bottom, similar to river steamboats of the present day, and *very sharp*, with *fine tapering extremities*, with the stem and stern posts in a curvilinear shape, and both inclined in opposite directions, as in common vessels, but at a very acute angle with the horizon. You have now only to conceive this boat split into equal parts, longitudinally, from stem to stern, down through the keel, and the two halves placed at any desired distance from each other in parallel lines, but joined above water by timbers and deck in the most substantial manner, and you have my plan.

I will now proceed to prove the superiority of such a construction over Burden's boat.

The lines of the figure marked A, present an end view of one of my twins cut *across* and *entirely through* at the centre, thereby showing the shape of the timbers or model of the twins, at the centre; the side timber, B, being 8 feet long, that is, that portion of it contained between the side timbers B and D. Within this figure is inscribed a circle of 8 feet diameter, representing an end view of one of Burden's twins, severed across at the centre also.



Now, for a clearer perception of the buoyant properties of the two plans, we will suppose that the above circle represents the circumference of a cylinder 100 feet long, which does not have tapering, pointed extremities, like Burden's, but whose ends are of the same diameter as the centre, viz. 8 feet. We will also suppose the lines of the above figure to represent the depth and width of a fabric 100 feet long also, whose ends shall have the same dimensions (8 by 8) and not pointed, as after my plan.

Bearing in mind these forms, we will assume that the weight of 200 tons are requisite to immerse the circular figure 2½ feet in the water, the surface of which is represented by the water line E.

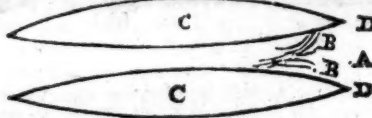
Now, a simple inspection of the two figures will suffice to show that 200 tons could immerse the black lined figure hardly more than half that depth, because, besides immersing an area equal to the segment F, it would have to immerse also the two areas G and H, which, together, are equal to ⅓, and a little more, of the area F.

The limits of the paper forbid entering into an exact mathematical calculation respecting the draft of each construction, but the foregoing figure and explanations must convince you that my plan is superior in respect of draft, and

we know that the less the draft the greater the velocity, other things being equal.

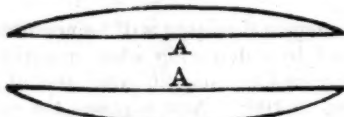
Now, in regard to "other things," they are not equal—the inequality being in my favor. For, with respect to the heads of my boat, I can model them in a manner superior to that of Burden's, for dividing and gliding over the water.

To perceive another advantage which my mode possesses over his, we will imagine that his deck is removed, and that we, being in the air over his boat, look down upon it. It will of course present the following appearance—the twins being 16 feet apart at the centre C C.

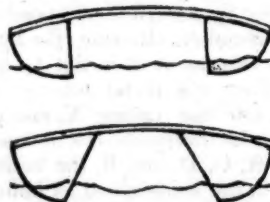


I am told that about 1/4th of their length is above and clear of the water at each extremity. Therefore, supposing them to be in motion towards A, we at once perceive that a volume of water at B B, about 21 or 22 feet wide, (the distance between D and D being exact 24 feet,) must of necessity be compressed to a width of 16 feet in its passage at C C, and that the greater the power with which you urge the boat, the greater will be the accumulation of water at B B.

My boat viewed from above would present the following appearance:



from which you can of course perceive that the water in its passage between the twins can move with no obstruction. The two inner sides at A A can be either perpendicular to the surface or inclined toward each other, shown thus by end views:



In either mode the water passes without obstruction. For certain reasons it is thought that inclined inner sides, as in the under figure, are preferable.

My other advantages are, that I can use the holds of my twins, which Burden cannot do with his; and that I can construct a much stronger fabric, capable of withstanding a heavy sea, which cannot be said of his.

It is well known that twin boats have long been in use before Mr. Burden or I ever thought of our plans. The principal point of superiority in mine over all others is, that I dispense with those great obstacles to rapid motion, the *inside bows*, represented by a a in the annexed view of a common New-York ferry-boat.

"They (the two inside bows) although as sharp as the two outside bows, it can be seen at a glance, impede a boat's progress vastly more than the two latter.

The keels of my twin boats being of a curvilinear shape, allow the boat every facility required in steering and turning. Respectfully,
CHARLES HARRIS.

P. S.—I will add that, with a rough model 5 feet long, the whole of which, with all her spars and sails, weighed not 10 pounds, having hoisted her sails on the river in a good sailing breeze, I could hardly catch her in a large boat, steered by myself, and propelled by a large sail and two stout oarsmen. She beat me when I used the sail only. If a little model would do

this, what must be the velocity of a large vessel built upon this plan?

N. B.—The cuts intended to illustrate and explain the inventor's plans are so indifferently executed, that but an imperfect idea can be gained from them.

LANSINGBURGH, March 5, 1834.

To the Editor of the Mechanics' Magazine:

SIR,—I wish, through the medium of the Mechanics' Magazine, to offer a few remarks on a communication which appeared in the "Evening Star for the country," of February 28, signed by a Mr. Charles Harris, announcing his discovery of a plan of a boat which is to put Mr. Burden's boat at least into the back ground, if not into oblivion; of which wonderful discovery, Mr. H. has had the prudence to avail himself and heirs, by securing it at the patent office. I should not think proper to notice the above communication, were it not that there are persons possessing both the means and the disposition to patronize valuable improvements, but who have not sufficient acquaintance with mechanical science to enable them to judge with certainty as to the comparative merits of new inventions, until tested by experience. Such persons are liable to be imposed upon by plausible appearances, or to withhold that patronage from real merit which they would cheerfully give, if they knew where and when to bestow it.

With respect to Mr. H.'s plan of a boat, I have no disposition to question the sincerity of his belief, either as to the value of the discovery, or that he is the "true and original inventor;" but I wish to inform him, for his future benefit, and for the benefit of others, that he is as completely mistaken in one point as in the other; and he could not be more so in either.

With respect to his claim as the inventor, I would inform Mr. H. that Mr. Simon Fairman, now residing in this village, built a boat at Middletown, in Connecticut, in the year 1817, in the months of July and August, in all respects precisely on the plan which Mr. H. now claims as his. This boat, or model of a steamboat, was 35 feet long, and as Mr. H. very naturally describes it, was a boat split in two, lengthwise, through the middle, and the two approximate or inner sides were straight and parallel.

As it was not large enough, and indeed not intended for steam, he put in a wheel and prepared it to move by human power. It was exhibited at Middletown for some time, and he then, in the month of September, went down the river with it, and round to New-London, where it excited considerable notice.

The speed, however, was not equal to his expectations. Upon strict examination, he found that the water in the straight passage being thrown back by the wheel, left a hollow towards the stern, which caused backwater. He then took out his wheel and built a false swell of considerable thickness on each of the two straight sides, and the result was a gain in speed, with the same power, from four to six miles per hour. After running it with passengers, a number of trips, between N. London and Norwich, he sold it for \$300 to a gentleman who carried it to Demarara. So much for the originality of Mr. H.'s invention.

As to the superiority of strength his plan possesses over Mr. Burden's boat, the best way to decide the point is to make a strong iron bound barrel of good oak staves, and fill it with some heavy substance, say pork, for instance; and take the same kind of staves and make a square box to hold the same quantity, and bind it with the same weight of iron, and see which will endure the most violence without injury; or, what will amount to the same thing, prove that angles are stronger than arches.

In the advantage which Mr. H. calculates to gain over Mr. B.'s boat by the straight passage of the water through the centre and consequent removal of the angle of resistance in meeting the water, he will thereby add just as much to

the angle, and of course to the resistance on the outside.

I am not the advocate nor the eulogist of Mr. Burden. I am scarcely known to the gentleman, or he to me. But I should be sorry to see any gentleman deterred from encouraging Mr. B. and perhaps injuring himself thereby, and I should be equally sorry to see Mr. H. throw away his money, or that of any one else, under the mistaken idea that his plan is superior. He is certainly entitled to the satisfaction of trying the experiment, and I shall enjoy the satisfaction of having warned him of its inutil-
ARCHIMEDES.

THE NEW YORK CANALS.—The prosperity of these noble works is of such vital importance to the whole State, and to this city in particular, that we shall stand excused in the eyes of all readers for presenting to them so frequently, facts tending to show the great efforts made and making in Pennsylvania, to cut us out from the trade of the West. It is from these considerations we copy the annexed article from the Pittsburgh Gazette of Wednesday last.

It is at such a time as this, when every nerve is strained to throw us out in the race of competition, that our political managers, instead of applying the accumulation of the Canal fund to the redemption of the Canal debt—so that, it being paid, the tolls might at once be very much reduced—are sporting with it in order to prop up the *Safety Fund* system. The two millions of dollars now belonging to that fund might at this moment be remitted to London, and there employed in the purchase of Canal stocks at a rate, little if any thing above par. Instead of that, it is held by the Commissioners of the fund, just as the public deposits are held by the President, as a fund to be used and transferred at pleasure, to reward this or to punish that Bank, according to the more or less political subserviency of its Directors.

And yet the Legislature and the people submit in silence. We, at least, will do our duty in calling attention to the truth as it is, and then, come what may, we shall be free from reproach.

[From the Pittsburgh Gazette, of March 26.]

THE CANAL AND RAIL ROAD are now in full and successful operation. Goods arrived yesterday, in eleven days from Philadelphia. We believe the calculation is to deliver them in ten days, when the arrangements are all completed.

We have been informed that the New Yorkers have contracted to deliver goods at Portsmouth, on the Ohio, by the way of the New York and Ohio Canal, and Lake Erie, for \$2.6 1/4 per hundred, when their Canal is opened. By the Pennsylvania Canal, goods will be delivered at Cincinnati for \$2.05. By the 1st day of May, this will probably be reduced to \$1.80.

In the time of transportation, we will possess a still more decided advantage. Merchandise will be delivered from Philadelphia at Cincinnati, in 14 or 15 days. From New York to Cincinnati will require 25 days, and frequently much longer. The risk, by the Lake, is very great—by the Pennsylvania Canal and Railroad, almost nothing.

The New York Canal will not be opened for more than three weeks yet—in that time, steamboats may proceed to St. Louis or Nashville, and return to Pittsburgh; and, at the same time, merchandise may be delivered at the Sault de St. Marie, or Chicago. Our prospects in relation to these great improvements, are truly encouraging; if they are not obscured by the folly and madness of General Jackson.

While on the subject of Canals, we annex the following notice from the Argus of a new bill introduced by Mr. Humphrey into the Assembly, "to provide for the improvement of the Canals of this State."

It authorizes and requires the Canal Commissioners to construct a second set of lift locks, on the Erie Canal, from Albany to Syracuse, and all proper works for the purpose of adapting the canal to the use of double locks. Also authorizes them to construct a feeder from the Niae Mile creek in the town of Camillus, to the Jordan level. Also to reconstruct the Rochester aqueduct. Also to construct a navi-

gable feeder, of a suitable width and depth for steamboats, between the Genesee river and Erie canal, and to improve the navigation of that river. The act to take effect on its passage.

INFLUENCE OF COLOR ON THE ABSORPTION OF HEAT AND OF ODOROUS PRINCIPLES.—On the 20th of June, 1833, a paper was read before the Royal Society, "On the Influence of Color on Heat and Odors," by James Stark, M. D., of Edinburgh; of which the following is an abstract.

The author observes, that the only experiments on record relating to the modifying effect of different colors on the absorption of heat from solar light are those of Franklin and Sir H. Davy. In order to investigate this subject, the author employed pieces of wool, silk, and cotton, which were wrapped round the bulb of a thermometer placed in a glass tube; the tube was then plunged into boiling water, and the time which elapsed during the rise of the thermometer from one given point to another was accurately noted. Other experiments were also made with an air-thermometer, of which the bulb was coated with various colored materials, and heat thrown on the ball by means of polished tin reflectors from an Argand burner. The results accord very nearly with those of Franklin and of Davy; the absorbing power with regard to different colors being nearly uniformly in the order of black, brown, green, red, yellow, and white. The author next investigates the differences which occur in the radiation of heat by differently colored substances; a subject on which he is not aware that any experiments have ever been made previously to his own. The mode of ascertaining the amount of radiation was generally the converse of that by which the absorption of heat had been determined: namely, by exposing the colored substances, in contact with a thermometer, to cooling instead of heating processes. The general result of all his experiments was, that the loss of caloric by radiation follows exactly the same order, with regard to the color of the radiating surface, as its absorption. In the second part of his paper the author gives an account of a course of experiments which he made with a view to discover the influence of color on the absorption of odorous effluvia, and more especially in the case of the absorption of the fumes of camphor and assafetida by woollen cloth of different colors. Black cloth was always found to be possessed of the greatest absorbing powers, and white of the least; red cloth being intermediate between them. Cottons and silks gave, on trial, precisely the same results, which were further confirmed by the different weights acquired by these substances from the deposition of camphor upon them.—[Proceedings of the Royal Society.]

MIGRATION OF FISHES AND BIRDS.—"I fear I am not entomologist enough to follow the life of the May-fly, but I shall willingly have my attention directed to its habits. Indeed, I have often regretted that sportsmen were not fonder of zoology; they have so many opportunities, which other persons do not possess, of illustrating the origin and qualities of some of the most curious forms of animated nature; the causes and character of the migrations of animals; their relations to each other, and their place and order in the general scheme of the universe. It has always appeared to me, that the two great sources of change of place of animals was the providing of food for themselves, and resting-places and food for their young. The great supposed migrations of herrings from the poles to the temperate zone have appeared to me to be only the approach of successive shoals from deep to shallow water, for the purpose of spawning. The migrations of salmon and trout are evidently for the purpose of depositing their ova, or of finding food after they have spawned. Swallows and bee-eaters decidedly pursue flies over half a continent; the scolopax or snipe tribe, in like manner, search for worms and larvae,—flying from those coun-

tries where either frost or dryness prevents them from boring,—making generally small flights at a time, and resting on their travels where they find food. And a journey from England to Africa is no more for an animal that can fly, with the wind, one hundred miles in an hour, than a journey for a Londoner to his seat in a distant province. And the migrations of smaller fishes or birds always occasion the migration of larger ones, that prey on them. Thus, the seal follows the salmon, in summer, to the mouths of rivers; the hake follows the herring and pilchard; hawks are seen in great quantities, in the month of May, coming into the east of Europe, after quails and landrails; and locusts are followed by numerous birds, that, fortunately for the agriculturist, make them their prey."—[Sir H. Davy's Salmonia.]

OPPOSITION OF IGNORANCE TO THE USE OF PRINTING.—In the 'Typographical Antiquities' of Ames and Herbert, it is stated that the first book printed on paper manufactured in England came out in 1495 or 1496, from the press of Winkin de Worde. Shakspeare—whose chronology is not to be trusted—makes Jack Cade, in the reign of Henry VI., (who was deposed in 1461,) thus accuse Lord Sands: "Whereas, before, our forefathers had no other books but the score and the tally, thou hast caused printing to be used, and, contrary to the king, his crown, and dignity, thou hast built a paper-mill." The insurrection of Jack Cade was ostensibly for the redress of grievances amongst the people. Shakspeare fixes the complaint of Cade against printing and paper-making some ten or twenty years earlier than the introduction of printing amongst us; but he could not have better pointed out the ignorance of popular violence,—and all violence is the result of ignorance. The best instruments for producing good government, and equal laws for all men, have been the paper-mill and the printing press; and exactly in proportion as the knowledge which they embody has been diffused, have we advanced, not only in our social arrangements, but in every other manifestation of a prosperous and well ordered community. Whatever remains to be accomplished will go hand-in-hand with the continued diffusion of knowledge.

FANNIN'S MILL.—An ingenious wight, named William Gall, has constructed a pair of self-acting fanners, which, without the aid of man, sift wheat, corn, &c. The simplicity of the invention is astonishing. By a funnel of sheet-iron, the wheat descends upon an iron wheel full of brackets; the wheel is so nicely balanced, that the moment the wheat falls the wheel revolves, and throws the wheat into a pair of fanners on the flat below. On the outside of the iron wheel is a wooden one, and over it is a belt attached to the fly wheel of the fanners, which impels them, and so long as a particle of wheat is left, the machine moves and throws it out.—[Sat. Eve. Post.]

REMOVAL OF A STEEPLE.—The Genoa Gazette contains an account of the removal of a church steeple entire, at Crescentino, in Piedmont, from one point to another, at several yards distance, where it was placed on a new foundation. The master mason was so confident of success that he made his son remain in the steeple ringing the bell during the operation.

GAS IN THE RAILWAY CARRIAGES.—We understand that measures are in progress for the introduction of portable gas for the lighting of the railway carriages. One carriage has been already furnished with this illuminating principle.—[Manchester Advertiser.]

Sir John Herschell has sailed on his astronomical mission to the Cape of Good Hope. He is expected to be absent about three years. He went out in the Catherine Stuart private ship, which has also on board Major-General Sir B. D'Urban and staff.

Animal Mechanics, or Proofs of Design in the Animal Frame. [From the Library of Useful Knowledge.]

(Continued from page 181.)

OF THE FOOT.—Let us take the arrangement of the bones of the foot, according to the demonstration of the anatomists.

They are divided into the *tarsus*, which is composed of seven bones, reaching from the heel to the middle of the foot. The *metatarsus*, which consists of five long bones laid parallel to each other, and extending from the *tarsus* to the roots of the toes. The bones of the toes are called *phalanges*, from being in the form of a *phalanx*.

There are in all thirty-six bones in the foot; and the first question that naturally arises is, why should there be so many bones? The answer is, In order that there may be so many joints; for the structure of a joint not only permits motion, but bestows elasticity.

A joint, then, consists of the union of two bones, of such a form as to permit the necessary motion, but they are not in contact; each articulating surface is covered with cartilage, to prevent the jar which would result from the contact of the bones. This cartilage is elastic, and the celebrated Dr. Hunter discovered that the elasticity was in consequence of a number of filaments closely compacted, and extending from the surface of the bone, so that each filament is perpendicular to the pressure made upon it. The surface of the articulating cartilage is perfectly smooth, and is lubricated by a fluid called *synovia*, signifying a mucilage, a viscous or thick liquor. This is vulgarly called *joint oil*, but it has no property of oil, although it is better calculated than any oil to lubricate the interior of the joint.

When inflammation comes upon a joint, this fluid is not supplied and the joint is stiff, and the surfaces creak upon one another like a hinge without oil. A delicate membrane extends from bone to bone, confining this lubricating fluid, and forming the boundary of what is termed the cavity of the joint, although, in fact, there is no unoccupied space. External to this capsule* of the joint, there are strong ligaments going from point to point of the bones, and so ordered as to bind them together without preventing their proper motions. From this description of a single joint, we can easily conceive what a spring or elasticity is given to the foot, where thirty-six bones are jointed together.

An elegant author has this very natural remark on the joints: "In considering the joints, there is nothing perhaps which ought to move our gratitude more than the reflection, *how well they wear*. A limb shall swing upon its hinge, or play in its socket, many hundred times in an hour, for sixty years together, without diminution of its agility, which is a long time for any thing to last, for any thing so much worked and exercised as the joints are. This durability I should attribute, in part, to the provision which is made for the preventing of wear and tear: first, by the polish of cartilaginous surfaces; secondly, by the healing lubrication of the mucilage; and in part to that astonishing property of animal constitutions, assimilation, by which, in every portion of the body, let it consist of what it will, substance is restored and waste repaired."—[Paley.]

If the ingenious author's mind had been

professionally called to contemplate this subject, he would have found another explanation. There is no resemblance betwixt the provisions against the wear and tear of machinery and those for the preservation of a living part. As the structure of the parts is originally perfected by the action of the vessels, the function or operation of the part is made the stimulus to those vessels. The cuticle on the hands wears away like a glove; but the pressure stimulates the living surface to force successive layers of skin under that which is wearing, or, as the anatomists call it, *disquamating*, by which they mean that the cuticle does not change at once, but comes off in *squamæ*, or scales.

The teeth are subject to pressure in chewing or masticating, and they would by this action have been driven deeper in the jaw, and rendered useless, had there not been a provision against this mechanical effect. This provision is a disposition to grow, or rather to shoot out of their sockets; and this disposition to project, balances the pressure which they sustain; and when one tooth is lost, its opposite rises, and is in danger of being lost also, for want of that very opposition.

The most obvious proof of contrivance is the junction of the foot to the bones of the leg at the ankle joint. The two bones of the leg, called the *tibia* and the *fibula*, receive the great articulating bone of the foot (the *astragalus*) betwixt them. And the extremities of these bones of the leg project so as to form the outer and inner ankle. Now, when we step forward, and whilst the foot is raised, it rolls easily upon the ends of these bones, so that the toe may be directed according to the inequalities of the ground we are to tread upon; but when the foot is planted, and the body is carried forward perpendicularly over the foot, the joint of the leg and foot becomes fixed, and we have a steady base to rest upon. We next observe that, in walking, the heel first touches the

Fig. 11



ground. If the bones of the leg were perpendicular over the part which first touches the ground, we should come down with a sudden jolt, instead of which we descend in a semi-circle, the centre of which is the point of the heel.

And when the toes have come to the ground, we are far from losing the advantages of the structure of the foot, since we stand upon an elastic arch, the hinder extremity of which is the heel, and the anterior the balls of the toes. A finely formed foot should be high in the instep. The walk of opera dancers is neither natural nor beautiful; but the surprising exercises which they perform give to the joints of the foot a freedom of motion almost like that of the hand. We have seen the dancers in their morning exercises stand for twenty minutes on the extremities of their toes, after which the effort is to bend the inner ankle down to the floor, in preparation for the Bolero step. By such unnatural postures and exercises the foot is made unfit for walking, as may be observed in any

of the retired dancers and old *figurantes*. By standing so much upon the toes, the human foot is converted to something more resembling that of a quadruped, where the heel never reaches the ground, and where the paw is nothing more than the phalanges of the toes. This arch of the foot, from the

Fig. 12.



heel to the toe, has the *astragalus*, A, resembling the key-stone of an arch; but, instead of being fixed, as in masonry, it plays freely betwixt two bones, and from these two bones, B and C, a strong elastic ligament is extended, on which the bone A rests, sinking or rising as the weight of the body bears upon it, or is taken off, and this it is enabled to do by the action of the ligament which runs under it.

This is the same elastic ligament which runs extensively along the back of the horse's hind leg and foot, and gives the fine spring to it, but which is sometimes ruptured by the exertion of the animal in a leap, producing irrecoverable lameness.

Having understood that the arch of the foot is perfect from the heel to the toe, we have next to observe that there is an arch from side to side; for when a traverse section is made of the bones of the foot, the exposed surface presents a perfect arch of wedges, regularly formed like the stones of an arch in masonry. If we look down upon the bones of the foot, we shall see that they form a complete circle horizontally, leaving a space in their centre. These bones thus form three different arches—forward, across, and horizontally; they are wedged together, and bound by ligaments, and this is what we alluded to when we said that the foundations of the Eddystone were not laid on a better principle; but our admiration is more excited in observing that the bones of the foot are not only wedged together, like the courses of stone for resistance, but that solidity is combined with elasticity and lightness.

Notwithstanding the mobility of the foot in some positions, yet, when the weight of the body bears directly over it, it becomes immovable, and the bones of the leg must be fractured before the foot yields.

Smoky Chimneys. By COMFORT. To the Editor of the *Mechanics' Magazine*.

In the number of your periodical for January, there is an article headed "smoky chimneys," accompanied by rules for their cure, condensed from the works of Count Rumford.

*It may be observed that the improvement in fire-places was proposed by Count Rumford with a view to economy in the article of fuel, and the suffusion through rooms of an increased quantity of heat from any given quantity of fuel. The Count, indeed, observes, that his plan of a fire-place will often act as a cure to smoky chimneys, but his chief object was economy in fuel, and his experiments had this as their chief, if not their sole object.

The result of his studies, scientific and operative, led to the conclusion, in his mind, that four inches is the proper width for the

* From capsule, a little case or box.

throat of chimneys, and this will probably be found applicable to as many, or to more cases, than any other, which, as a general standard, could be adopted. It will not, however, be equally applicable to all cases, nor will any general rule, in this respect, apply universally.

The proper width of the throat of a chimney is the least which will admit all the smoke, together with the quantity of rarified air necessary to aid its escape through the chimney. This must be regulated by circumstances, and chiefly by the material of the fuel. Anthracite coal, producing little smoke, would require a throat even narrower than four inches. Coal, of the quality of the Sydney, producing a large volume of smoke, might perhaps require a width of throat exceeding four inches.

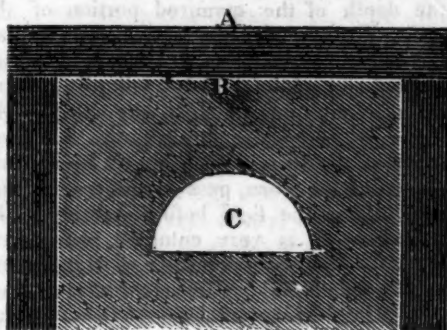
The reasonableness of thus narrowing the throat of the chimney for the purpose of yielding an increased heat to the room, will, upon the least reflection, be sufficiently obvious. The smoke, if not impeded by some obstruction, will naturally ascend through the chimney; the heat of the fire, from its affinity to smoke, will ascend with it. Should the volume of air constantly rushing into the room find an over-easy passage through the chimney, the entire, or very nearly the entire, of the heat will escape with it; hence the fact, that persons sitting in a room, in presence of a large fire, often suffer from cold, and even in a degree greater than they would were there neither fire nor fire-place in the room.

A chimney may, however, be so narrow in some part of it, or throughout the whole, that it will not admit all the smoke, a part of which will, in such case, in search of a new channel of escape, make its way into the room. A similar effect will be produced when the chimney is so injudiciously constructed that the smoke cannot escape through it with the required ease and rapidity. A chimney may be so placed in relation to another chimney within the same building, as to cause it to smoke. These different causes of smoky chimneys may require very different remedies. Count Rumford's plan of narrowing the throat of a chimney will often effect a cure, but surely not universally. I propose herein to offer a remedy, which, although not proposed as an universal panacea, will, it is presumed, effect a cure in the majority of cases of smoky chimneys.

It is generally known that by lowering the mantle-piece the draft is increased, and the smoky chimney thus partially or fully cured; but it is also known that this mode will, by increasing the draft, lessen the quantity of heat in the room, and that warmth is in this way dispensed with, to avoid the annoyance of smoke. A plan which would yield the advantage of a lowered mantle without its disadvantages would be a desideratum. This is, perhaps, not to the full desirable extent practicable; it is certainly practicable to a considerable extent. It may be introduced in aid of the Count's plan, where that fails, as a remedy for smoky chimneys, or it may be adopted in cases where mere economy is not an object, or where it would be inconvenient to resort to the Count's plan.

On reference to the cut No. 2, in your Magazine of January, it will be seen, that in order to reduce the throat of the chimney, there is a false back. This is made of solid work, and is extended about six inches above

the breast of the chimney, where the width of four inches is acquired, and is that part distinguished as the *throat*. We may suppose this false back to be in thickness equal to the length of a common brick, say eight inches. If made of the breadth of a brick, there would be a vacant space of four inches between the false and the real back. By turning an arch in the false back, or by an aperture of any other shape, there might be left an opening for the admission of smoke and air into the vacant space between the



A, chimney-piece—B, false back—C, aperture.

backs. This would produce all the effect of a lowered mantle, without producing all the inconvenience. The portion of inconvenience which it might produce would be entirely provided against by a metal casting fitted to the arch-way, and supplied with a door, to be closed or opened as occasion might require.

This contrivance would most probably relieve the occupants of houses, in nine cases out of ten, from the annoyance of smoky chimneys, and from the heavy charges of the chimney doctor.

COMFORT.

METHOD OF DRESSING SKINS PRACTISED IN MAROCCO.—The following account of the method practised in dressing skins in Morocco was transmitted to the Zoological Society by W. Willshire, Esq., a Corresponding Member of that Society, in a letter dated Mogadore, May 5, 1833. Its results are stated to be excellent, as regards the preservation and color of the fur, and the flexibility of the pelt.

Wash the skin in fresh water to deprive it of the salt; as soon as this is done, scrape the flesh off, when take two pounds of alum, one quart of buttermilk, and two or three handfuls of barley-meal, which mix well together, and lay on the fleshy side of the skin equally; fold up and press it together carefully, and let it lie two days. On the third day take it to the seaside, wash the skin well, and when clean and free from mixture, hang it up to let the water run from it: then take two pounds of alum finely powdered, and throw or spread it equally on all parts of the skin; again fold up as before, and allow it to lie three days, when it will be in a proper state to dry in the sun, laid flat, without taking away the powder. When it is dry, take a pint or two of fresh water, and sprinkle it upon the skin, and again fold it up carefully for about two hours, to imbibe the water; then lay it on a table, and, after scraping it free from the mixture and flesh, take a sand-stone (rather rough) and rub the skin well until it becomes soft and pliable, then hang it in the shade to dry. The process is then complete.

When the skin is perfect, having the head, horns, &c. take off the horns, and fill their cavity with a mixture of equal parts of powdered alum and ashes of charcoal dissolved in water, and expose them two days to the sun. Saturate the trunks of the horns with eight ounces of alum dissolved in water, and fold up with the skin, and apply the same on each occasion when employed in curing the skin. The flesh on the head and jaws to be carefully taken

off, filling the same with powdered alum. It should remain in the sun until perfectly dry.

In addition to the foregoing description of the mode used in Morocco, in dressing skins, as related by the persons employed by Mr. Willshire, it may be well to observe that the process does not take so long at Mogadore, as Mr. W. has often received back skins of the Aoudad and Leopard from the dresser, on the third or fourth, and never exceeding the fifth day, perfectly cured. Allowance has been made by the dresser, in the foregoing description, for the difference in the climate of London.

The skins of smaller animals must not be subjected to so lengthened a process, or they will become harsh, and the pelt impoverished. —[Proceedings Zool. Soc.]

RECIPES.—*For an Olive Green.* Let the article be first washed in soap and water, then wetted out in warm water; then boil two ounces of chipped logwood and three ounces of chipped fustic together for half an hour; dip out your dye liquor, and put it into a pan with hot water; put in your goods; dissolve two drachms of verdigris in a teacup-full of warm water, which put into a pan of cold water; take your gown from the dye, and run it through the verdigris water, well handling it for ten minutes; take it out and wash it in clean water, and through the dye liquor, and again in the verdigris water, and so continue this process till you obtain the color required, only taking care to wash it out of the verdigris water before you put it in the dye liquor: dry it in the shade.

For Yellow Cotton.—To make a lemon yellow, first wash your article well in soap and water, then rinse it in warm water. For every yard of stout cotton, dissolve a piece of blue vitriol as large as a horse bean, in boiling water; and when the water is at a hand-heat, put the cotton in, and handle it for half an hour. In the interim take a quarter of a pound of weld for every yard of cotton, and boil it well for half an hour; dip the liquor out in a pan, and handle your cotton through this till it comes to the fullness required; take it out to cool, and when cold, wash it out, and dry it in the air.

TO PRESERVE BOOKS.—A few drops of any perfumed oil will secure libraries from the consuming effects of mould and damp. Russian leather, which is perfumed with the tar of the birch tree, never moulders; and merchants suffer large bales of this leather to remain in the London docks, knowing that it cannot sustain any injury from damp. This manner of preserving books with perfumed oil was known to the ancients. The Romans used oil of cedar to preserve valuable MSS. Hence the expression used by Horace, "*Digna cedro*," meaning any work worthy of being anointed with cedar oil, or, in other words, worthy of being preserved and remembered. —[Greenf. Gaz.]

TO PRESERVE EGGS.—Apply with a brush a solution of gum-arabic to the shells, or immerse the eggs therein; let them dry, and afterwards pack them in dry charcoal dust. This prevents their being affected by any alterations of temperature.

TO MAKE MAPLE SUGAR.—It has been customary to cut a gash in the tree, from which saccharine liquor flows, or to bore a hole, and put in a reed, and, when the liquor ceases to flow, plugging up the hole. Both these methods are injurious, and tend to destroy the tree. In the latter case, the tree roots round the plug to some distance within. The following method is proposed in lieu of these, and has been successfully practised in Kentucky. At the proper season for running of the liquor, open the ground and select a tender root, about the size of one or two fingers; cut off the end, and raise the root sufficiently out of the ground to turn the cut end into the receiver. It will emit the liquor from the wound as freely as by either of the other methods. When it ceases to flow bury the roots again, and the tree will not be hurt.

The Philosopher of Bologna unmasked; or Galvani not the Discoverer of Galvanism.
By R. W. DICKINSON. [From the London Mechanics' Magazine.]

SIR,—It appears to me very singular that no notice should ever have been taken of an experiment made by M. Du Verney, before the Fellows of the Royal Academy at Paris, in the year 1700, and published by their secretary, the celebrated M. Fontenelle, in his Account of the Transactions of the Society for that year. It is there related that M. Du Verney exhibited a dead frog, and on irritating it with a scalpel the nerves of the belly, that led to the thighs and legs, trembled and suffered a sort of convulsion. He afterwards cut the nerves in the belly, and stretching them with his hands, a similar convulsion was produced by the application of the scalpel. Now, though it may at this distance of time be impossible to adduce positive proof that Galvani was acquainted with this previous experiment of M. Du Verney, I cannot help thinking that it is quite as likely he was so, as that he should have come to a knowledge of the fact in the strange way he pretended, namely, through one of his pupils accidentally touching with a scalpel the crural nerve of a frog, which was being prepared in the laboratory of the professor, to make a soup for his sick wife. That a frog should have been the animal operated upon in both instances, and a scalpel the operating instrument, are coincidences pregnant with suspicion. At all events, this much cannot be disputed, that the Bolognese philosopher did at least only discover what Verney had discovered and made known to the world long before; though there is now, probably, as little chance of our seeing the name of Verneyism substituted for Galvanism, as Columbia for America.

I am, sir, yours sincerely,

R. W. DICKINSON.

Ilfracombe, Dec. 16, 1833.

AGRICULTURE, &c.

[From the New York Farmer.]

Suggestions relative to Farmers' Work for April. By the EDITOR.

We are under the impression that it would be policy for farmers to sow and plant as largely of the marketable crops, as they would have done had not those public measures been taken which have been so disastrous in their overthrow of confidence or credit. We hardly conceive it possible that Congress will adjourn without adopting some plan that will give to confidence its potency, and thus remove the weight from the elastic spirit of this young and rising nation. If law once more assumes its appropriate influence and its healthful tone, before the energies of the people become sensibly enervated, life and vigor will again pervade the whole system; the rivulets that every where vein our country will be free from their icy fetters, and again swell the streams of prosperity and wealth, carrying down to the cities of the sea the abundant and full-priced harvests. But should derangement stalk abroad over the land until mid-summer, then vain will be all hopes in a joyful harvest for this season. The condition of foreign nations is such that no material stimulus will be given to sales of American produce. Our chief dependence is on prosperity at home.

Ploughing.—Various opinions are given

in respect to the depth of ploughing. As a general rule, we believe the most successful farmers plough no deeper than the soil, or rather the turf, extends. This soil is not generally more than two to four inches; consequently if the plough runs five or six inches deep, the soil, or fertilizing portion of the furrow must become so very much diffused that the plants, particularly when young, will not find sufficient nourishment. This being the case, it would seem that the direction so generally given to plough a sandy loam deep, should also depend on the depth of the manured portion of the soil. The best farmers of the present day direct the utmost pains to be taken to turn the sod so completely that it will all ferment. This is done most effectually by one ploughing only, and some, to keep the sod from being in the least turned up by hoeing and ploughing the corn, pass a roller over, and then harrow the field before planting. On

Oxen.—It is very common, with even good farmers, to keep their working oxen in very thin flesh. This is bad policy; they cannot perform as much nor as heavy work; are not so capable of being substitutes for horses, nor will they last as many years; are fatted for the butcher with greater expense and in longer time. The extra expense in keeping working oxen in good condition does not probably exceed in a whole season the additional work they could thereby do in one month. And when we consider that they consume less food in fattening, and can be moderately worked all the time they are preparing for the butcher, it will be seen that there is economy in keeping a good portion of flesh always on them. Many people are under the impression that oxen in flesh cannot move as fast, nor undergo as much fatigue as they can when they are not much more than skin and bones. This is true with oxen that are well fed and unaccustomed to labor; but not otherwise, as many farmers can testify, and as correct reasoning would conclude.

Corn.—In communications from farmers we find that some varieties of corn will yield five pecks of shelled from two bushels of ears, and others but little, if any, more than four pecks. This seems to depend very much on the smallness of the cob. In planting corn, it is recommended to put six to eight kernels in a hill, and then to pull up at the first hoeing all but four of the most healthy spears. See page 98 and 109.

To prevent birds and fowls from scratching up the corn, the seed is covered with tar and wood ashes; and various other methods are adopted, but none that we are acquainted with have any decided advantages.

Skinless Oats.—This kind of oats begins to be considerably cultivated. As yet the seed commands a pretty high price, yet it is advisable, for every farmer who can, to procure at least a few quarts.

Flesh-colored Clover.—It would be well for farmers to furnish themselves with a few pounds, or even a few ounces of this seed, in order to test its merits. It may be of great benefit. See page 10.

Botts in Horses.—This is the season in which these worms are injurious to horses. Horses that have their food frequently seasoned with salt are said to be less liable to injury from them. Since botts seem to be fond of sweet liquids, it may be an advisable precaution to administer molasses with their food.

THE CHINESE MULBERRY.—We should advise every farmer to obtain at least one of the *Morus multicaulis*. It will not cost more than fifty cents; and by taking cuttings, or by laying, he may next spring have some ten or twenty plants.

GRAPE VINES.—Let that farmer who has not a good grape vine about his house, mount his horse and go a journey of some 10, 50, or 100 miles, to obtain an Isabella, Catawba, or some other choice native vine. It should make a farmer blush, in these days, to be compelled to say he has no vine to sit under. It implies that he is slow in availing himself of the proffered blessings of Providence—that he cannot think much of adding to the comforts and pleasures of his wife and children.

GRASS SEEDS.—It is very probable that the farmers of this country, in confining their attention exclusively to clover and timothy, do not realize as much hay and pasture as they would from a greater variety sown in the same field. In England the quantity sown to the acre for mowing is ten pounds of red clover, two of white do., two of yellow do., and one bushel of annual rye grass. For pasture, four of red clover, six of white do., four of yellow do., and one bushel of perennial rye grass. In this country grass seed is generally sown not later than the 15th of April.

YOUNG TURKIES.—No kind of domestic fowl sell better than fine turkeys; and yet comparatively few are raised in proportion to the numbers hatched. It is recommended to keep them from wet, and to feed them on homony and chopped onions. See page 13.

Forcing Asparagus. By EDWARD SAYRES. [For the New-York Farmer and American Gardener's Magazine.]

MR. FLEET.—After visiting your market at New-York, I am rather surprised at the little attention paid to forcing that useful vegetable the Asparagus, which I deem one of the first importance to the market gardener. The mode of forcing being simple, and the produce generally satisfactory, I trust a few practical remarks on the subject will be acceptable to some of your readers.

As soon as the frost is out of the ground, let a very moderate hot-bed be made, of any convenient size, with hot horse manure; the frame being placed on it in the usual manner, cover the bed three inches thick with earth, whereon the asparagus roots are to be placed, taken from an old bed or nursery rows three or four years old. The roots will require no trimming, but merely placed as thick as possible in the bed, so that the crowns are not placed on one another. This done, they are to be covered three inches with light soil or tanner's bark, when the sashes may be closed to draw the heat; but care must be taken not to let the lights remain on a day after the heat begins to rise, when six or eight inches more of light earth may be covered over the bed. The treatment is simply to give plenty of air in the day, and moderately covering the frame at night; to keep out the frost is sufficient. After the bed has been planted ten or twelve days, the roots will begin to vegetate, when a good watering is to be given every other day; and in three weeks after the time of planting, a good supply of asparagus will appear, and continue, if properly managed from 12 to 15 days.

EDWARD SAYRES.

Hyde Park, March 25, 1834.

Cultivation of Tares and Swedish Turnips.

By S. HAWES. To the Editor of the New-York Farmer.

MR. FLEET.—Having grown during the past season some tares and Swedish turnips, favorite crops with English farmers, I venture to send you some account of the culture and produce of both. About an acre of land in good condition, not having been recently cropped, was ploughed once, harrowed, and then sown with three bushels of spring tares and half a bushel of oats on the 1st of May last. I had not the seed early enough, or the tares should have been sown by the middle of April.

They grew most vigorously, and by the end of June were in flower, producing quite as much herbage as I ever saw them produce in England—indeed abundant; more than twice as much as any clover I had growing at the same time. From the time they were in flower they were cut as wanted, and given to horses, cattle, and pigs, all which ate them readily. Yet I did not think the stock did so well upon them as in England, possibly from the mode of their growth, which, either owing to the soil or climate, was different to what I had before seen. These went on growing freely after the pods were formed, though, commonly, when pods are formed, the whole strength of the plant is directed to perfect the seed, and the stalks soon cease to grow. They grew till the first week in September, when all were cut down, cured, and stacked. The haulm or straw was abundant, and is excellent food for sheep. The seed a poor crop, as from half an acre I had only five bushels, which, even allowing for much waste by fowls whilst growing, was too little, as half an acre ought to produce at least fifteen bushels. I intend to sow an acre with them this spring, and hope they may yield better.

For Swedish turnips I had five acres of land, a good sandy loam, ploughed and harrowed repeatedly till clean, then manured with about twelve good two-horse loads of half rotten manure per acre, which was ploughed in, and the turnips sown at different times, from the 15th of June to the 6th of July.

The seed was drilled on the flat surface 22 inches from row to row, and on the 6th of July we began to hoe out those drilled the 15th of June. But those drilled on the 6th of July we began to hoe on the 20th, being only 14 days from the time of sowing. In England I do not recollect any fit for the hoe in less than three weeks; but here vegetation is more rapid, both of turnips and weeds. In hoeing they were left about ten or twelve inches from plant to plant in the rows. They were hoed again in twelve or fourteen days, and afterwards a third time.

The plants soon covered the ground, the tops meeting, and the crop was an excellent one, equal to any I ever had in England. Part of the ground, which was low and not well drained, produced large turnips, but not so sound or sweet as those grown on high ground in the same field.

The whole were pulled early in November and thrown in heaps, then the tops were cut off and thrown to cattle, the turnips carted home and thrown into piles about 6 or 7 feet wide at the bottom, and gradually coming to a point, which was about 5 feet from the ground. Mould a foot thick was thrown over them, leaving at every 8 or 10 feet a

small hole to allow the warm moist vapor to escape, which always arises from the slight fermentation that takes place. No straw was used. The piles have been opened as wanted for use, closing the aperture with an old door and some litter for the time, and we have lost none. Fifteen or sixteen loads were put into an old ice-house for a few weeks, but the stock did not eat them so readily as those which came out of the piles. I doubt whether any cellar will keep roots so well or so sweet as earth alone. The crop was excellent, both in quantity and quality, but no account was kept, even of the number of loads, yet there must have been more than three thousand bushels. Cattle from the first were extremely fond of them; a lot of native wethers were a long time in learning to eat them, but at length did well upon them. My own South-down ewes having been fed on them, had abundance of milk in January, and thus my early lambs will go to grass in good condition. Pigs, old and young, are fond of them, and they need no cooking. In England many store pigs are kept on scraps and bits of Swedish turnips left by cattle.

Of the expense I can give no account, nor have I much faith in such accounts generally. The preparation of the ground, and the sowing, were interrupted by repeated rains, so in pulling them up the men were repeatedly stopped by frost, and had to get them secured as they best could. The culture of tares is nothing, but hoeing turnips is expensive, yet more and better food is yielded by turnips than by any other crop on this loam. On strong soils mangold wurzel would be a better crop, as such soils seldom grow good turnips; but beet, to do well, should be sown in May, and is very liable to be hurt by early frost. Swedish turnips are not injured by even severe frosts, if used quickly after; but freezing and thawing will spoil them.

Yours respectfully,

S. HAWES.

Albany, March 11, 1834.

Mr. Nutt's System of Bee Management. [From a Friend of this distinguished Apianian.]

It is one of the least interesting pleasures of an editor's duty to record the successful achievement of designs to which he has devoted his helping hand, to place in successful practice and deserved estimation the efforts of inventive genius, to whatever part of the wide fields of research its attention may have been devoted; and multifarious as are the objects which address themselves to his attention, in his varied capacity, as treasurer of scientific improvement and discovery, or dispenser of their benefits, it is ever a source of gratification that those exertions have been requited with merited success.

Since the first promulgation of Mr. Nutt's views, the *Mechanics' Magazine* has been the vehicle for the publication of his plans, and the furtherance of his designs. That they were possessed of originality and merit was evident, by their requiring neither sophistry nor mystery to impress them on public attention, for they claimed regard more from their simplicity than the extension at which they aimed. The pages of this Journal were alike open to the results of his patient investigation and research, as well as the queries of his opponents, and we are confident that, even to those proficient in ordinary modes of Bee Management, or who adhered with per-

tinacity to their usual modes, much good was elicited.

To the *Mechanics' Magazine* Mr. Nutt returns his obligations for the impetus which, through its medium, has been given to his system, the remuneration which he has received for his labors, and the great and extended success which has in every instance attended its introduction.

The system has now become one of facts, which are now sufficiently numerous, not to prove its superiority over all others which have preceded it, but to render its introduction a matter of important, national, economical consideration. To recapitulate individual instances of its success were only to refer to what has been extensively published in this journal. The superiority of the honey and its chemical characters are based upon the same foundation, and we therefore feel that in taking leave of the subject as a theory, or its success as merely problematical, by placing it upon permanent record, it will only be necessary to give such instances of its established success, as will at once silence the objections of rivalry. An inspection of the exhibition of the varied collections this season, at the National Gallery of Practical Science, in Adelaide street, where it has stood the test of the strictest examination, and has been the subject of much attention and inquiry, will sufficiently prove the correctness of this observation. The results of Mr. Nutt's takings, during the present year, from six colonies, has been seven hundred pounds of honey, averaging from one hundred to one hundred and twenty pounds from each hive; nor has he been alone in these marked proofs of success, as a reference may be made to the Apiaries of the Marquis of Blandford, Delabere House, near Reading; Rev. Thomas Clark, Gedney Hill; John Burman, Esq., Wisbech; and J. D. Salmon, Esq., Stoke Ferry, Norfolk, where the average products have been the same.

LIME AS A MANURE.—"Lime," observes Mr. Lambert in his excellent work on Ireland, "is peculiarly adapted to land full of weeds and roots, as it decomposes such."—"It is a better manure for wheat probably than any other crop; and the quality of wheat grown on land where it is applied is much improved, having a thinner skin, a better color, and yielding more flour."—"It may be freely applied to land devoid of much calcareous matter."

Lime should, as much as possible, be kept to the surface-soil; it readily sinks if ploughed in too deep. Though I have mentioned what many may think very heavy dressings of this manure, yet I have known good effects produced from a far lighter quantity; and I should say, it is safer to begin with a moderate dressing, which can always be increased if found necessary, than to over-dose at first. It is essential that the lime should be well slaked, and in a powdery state before spreading. To this end, if the weather chance to be dry, cover up the heaps with mould for a day or two, they will open as fine as if water-slaked.

PLANTING A VINE.—Every proprietor of a house in this city should plant one or more vines in the yard. By so doing he will add, in four or five years, at least ten dollars to his rent. Most people would be induced to give an additional sum in the rent of a house, in the yard of which there is a fine bearing grape vine. The Isabella is so certain in its growth, and in its bearing, and so cheap too, that no landholder need be disappointed in realizing the fruit of his labor and expense.

NEW-YORK AMERICAN.

MARCH 29—APRIL 4, 1834.

LITERARY NOTICES.

No. XIX.

Banks of the Au Sable, Jan. 15.

It was about eight o'clock, and a bright cold morning, when a handsome four horse stage coach, built in New York, and placed with more liberality than judgment on a route where a broad tired, low hung and light wagon would be much more appropriate,—drove up to my quarters at Chicago; and having received my luggage, crossed the river on the ice, and was a few moments after travelling through the deep snow over the Grand Prairie. My fellow passengers were, a respectable middle aged female and a smartly dressed young man of amiable appearance, whose handsome broadcloth suit worn as a travelling dress, bespoke the favored beau of some country village, or possibly a thriving young clerk from the city, engaged upon some agency business, and travelling in the style which he thought would best comport with the dignity of his employers. The driver was also accompanied on the box by a well made young half blood Chippeway of about five and twenty, who had come down from Mackinaw to seek employment, and was now going further South for the same object. The air being rather sharp on the Prairie, the lady took her seat between the young gentleman and myself, and thus wedged in together, we contrived to keep very comfortable—though our near neighborhood did not render us more communicative than people generally are after an early breakfast. We merely exchanged the ordinary common places which custom exacts from people thus thrown together; and then, unless when a wolf passing near our track, or a particularly large pack of grouse rising before us, called forth some exclamation, but few words were spoken by any of the company. At length, after having counted six wolves within twice as many miles, we approached a grove of timber, where while the trace grew quite densely in the centre, a few thin rows shot out like a reef of rocks from the shadowy island far into the Prairie. Here on the edge of a deep gully, through which winds the river Au Sable, was the log tavern at which the first stage of our day's journey, being 12 miles, concluded.—The horses were in a complete foam with their exertions in getting through the deep snow drifts across the prairie, and I easily persuaded the driver to abandon the comfortable but cumbersome vehicle which had brought us so far, and hitch his smoking team, which had still 12 miles to go, to a rough but strongly built sled before the door. My fellow passengers approved the arrangement, and subsequent events proved it a very fortunate one, for so deep was the snow on many parts of the road afterwards traversed, that it would have been impracticable to get a wheel carriage along, and it must have been deserted on the prairie. There was much to do however about our new equipage, before we could get started; and while our driver looked after his horses, one of the passengers had to shovel the snow out of the sleigh, another to drive a pin through the tongue, in order to fasten on the leaders, and a third, after filling the bottom with hay, to adjust the baggage, &c. &c. All this, with the aid of the stout Chippeway and the active young eastern traveller, was soon effected; and the former taking his seat with the driver on a board in front, while the latter shared half of my buffalo skins, and stowed himself upon the hay with me in the rear, Madame was well accommodated, with the cushions taken from the stage, on a trunk placed in the middle; and some heated stones being brought from the house and placed beneath her feet just as we started, no grandmother could sit more comfortably in her cushioned pew in old Trinity. A fast drive of 12 miles brought us at noon to another island of timber, where a little piquant girl of 16, with aloe black eyes and glossy locks as dark as night, arranged a plain but neat meal for us, and gave a relish to the entertainment by loosing one of the most vivacious tongues I had heard wag in the last three months. Here we changed horses, and a ride of 16 miles more brought

us about nightfall to a place called "Walker's Grave," where two or three log huts were sheltered from the north wind under an island of tall timber, and in one of which we have established ourselves for the night. A pile of bur oak, which makes a capital fire, flames up the enormous wooden chimney before me, and a number of stout yeomen around it, engaged in discussing the price of horses on the Wabash, prevent me, while handling a matter of such moment, from enlarging more upon the few objects of interest which have presented themselves to-day.

Ottawa, January 16.

I was hardly dressed this morning, when my only remaining fellow-traveller—the lady and the half-blood having parted company last evening—called me to the door to "see the cloud of prairie hens before it." I looked out, and there indeed, true enough, the oaks within gun shot of the porch were so loaded with grouse, that they showed more like a flock of pigeons than a covey of game birds. Having broken my gun, however, it was intolerably vexatious to see such capital shots thrown away, while these fine birds in those districts where I was prepared to bag them, were too wild to approach within shooting distance at all. The sleigh soon after came to the door, our driver having diminished his team by two horses, to meet, probably, the reduction of passengers already mentioned, and about a hundred yards from the house, we crossed a broad brook, known as the Au Sable River, and commenced ascending the bank beyond. But the snow was deep, and the heavy drift, having had its surface frozen over during the preceding night, our single span were unable to drag through it the clumsy sledge behind them. They plunged in up to their chests—"Go ahead, Sam!—gie up, Major!" shouted the driver—but Sam was thoroughly stuck fast, while the Major, in trying to sustain his military character by obeying orders, gave one spring, and floundering over the traces, was buried in the snow up to his crupper, and placed, *volens volens*, in full as quiescent a condition as the already settled Sam. For all of us to get out and take hold of the bits, was the next move—but it would not do. Sam, indeed, seemed a little inclined to make a retrograde movement, by kicking out the foot-board with his heels; while the Major, having gathered new energy for another charge wasted his fire in lifting up his knees as high as his mouth, and ineffectually throwing his fore hoofs in advance on the crusted snow, handling his feet the while much after the manner of the rampant unicorn on a calico stamp, who, unmindful of the mottoed garter he treads under his foot, so bravely paws the crown which the complaisant lion is pushing towards him. The driver at last became convinced of the necessity of returning for another pair of horses; and a young colt, called Blackhawk, with a hoary old plough-horse named Judge, were, after a little delay, procured and placed in advance of Sam and the Major on the top of the bank. Poor Sam seemed to dislike having the Judge's fetlocks brought so immediately in contact with his nose, they being nearly on a horizontal line—and he was accordingly inclined to retreat upon his haunches beneath which the snow formed so easy a cushion; but a single crack from the driver's whip sent the Major charging so vigorously upon Blackhawk, that the sable young chief gave a bound which carried us through the difficulty in a trice, and sent our vehicle skimming fast over the prairie. The grove in which we had passed the night soon vanished from sight, and a boundless expanse of snow-covered surface lay like an ocean before us. The arch of the clear blue sky seemed to spring at once from the silvered earth, which shone under the bright January sun with an intensity almost painful to the eye. The blue vault above, and the white plain below, were the only objects that met its glances, as they roamed for miles around: yet no one could complain of sameness in the tints of a picture so vast, a scene so illimitable. The immensity of the prospect seemed to exclude the idea of monotony, and perfect solitude was only wanting in such a scene to make one feel its grandeur. The lively rattle of my companion, however, whose society, after travelling so long entirely alone, I found no slight acquisition, prevented me from realizing its full effect; and when, after riding for about twelve miles, an island of timber hove in sight, while the beautiful sky of the morning clouded over, and the cold wind which began to set in from the west, indicated that the twelve miles we had yet to travel before we should reach the first house across this arm of the prairie would be anything but agreeable, I was contented to wrap myself as closely as possible in my buffalo robe, and join him in a game of prairie *loo*. Let you might search

vainly in Hoyle for this pastime, I must inform you, that the game consists merely in betting upon the number of wild animals seen by either party, toward the side of the vehicle on which he is riding, a wolf or deer counting ten, and a grouse one. The game is 100; and you may judge of the abundance of these animals from our getting through several games before dinner—my companion losing me with eleven wolves. Some of these fellows would stand looking at us, within half gun-shot, as we rode by them; while the grouse would rise continually from under our very horses' feet.

Before we had got through the twenty-four miles, the scene enacted at starting, was to be repeated with improvement; for on coming to the edge of a frozen gully, our two leaders, in their anxiety to avoid former difficulties, gave such a spring that they sunk through the ice to their shoulders, on the opposite side; while the wheel horses, being thrown down, were driven by the runners of the sleigh against the sharp edges of the ice thus exposed, and one of them was terribly lacerated. It was the unfortunate Sam, who, poor fellow, not having been watered since the morning, lay quietly on his side in the traces, with his fore legs up the slope, and his hinder ones in the pool, eating the snow thus brought in contact with his mouth, apparently perfectly unconscious of his wounds. Black Hawk and the Judge, of course, came to an anchor when they found such an accumulated weight dragging behind them; while the spirited Major seemed to be thoroughly dejected at this second discomfiture, and allowed us to turn him over and put him on his feet with scarcely the interposition of a struggle. Not far from the scene of this catastrophe we crossed the Au Sable, a narrow stream, with smooth banks, utterly divested of shubbery; and after, in the next 8 miles, encountering two or three tremendous snow banks, where our horses were frequently immersed to their cruppers, and whence nothing but the leaders, from their firm footing beyond, dragging the wheel horses thro' the heavy drift, could have extricated us, we reached a beautiful grove of elms and oaks, and stopped to change our worn-out team.

Entering a log cabin, not at all differing from the usual dwellings of the frontier settlers, I found a choice collection of books, in one corner, a volume of Algermon Sidney's works, in a fine old edition, being the first book I took up, and upon entering into conversation with the occupants of the cabin, I found that degree of general cultivation which, though often met with on the frontier, still always strikes a stranger with novelty; and yet, I know no reason why the fullest expanding of the intellect is incompatible with the handling of an axe, or the most luxuriant development of the imagination with following the plough. The farmer, of all operatives, has, perhaps, the most time for improvement; and when he dwells in a land where, while Nature showers her choicest bounties, man passes toward it from every side, and contributes on his new coming to the general stock of ideas, keeping, by this lively interchange, those already afloat in active circulation, there is everything in his circumstances to make him acute and reflective, and to liberalize his mind, if not to polish his manners.

It would be giving you a wrong impression, however, did I allow you to gather from this, that the oldest western settlers of this country are by any means so familiar with books as the emigrants from the East; for, among the latter there are many persons of altered circumstances, who, having once enjoyed better opportunities for literary culture, carry the traces of their old habits with them into the new scenes to which they so readily adapt themselves. Fluency of language, with an ease and power of expression, which sometimes swells to the dignity of eloquence, and often displays itself in terms of originality, at once humorous and forcible, constitute the conversational resources of the Western man; but as his knowledge is gathered almost altogether from conversation, he wants that exact acquaintance with facts and things which enriches the intellectual armory of his Eastern brother, in a similar situation of life. My opportunities as yet of forming an opinion might, perhaps, be questioned by one who did not know that the southern part of Michigan and the northern sections of Illinois are settled by people from almost every State in the Union. Having now traversed them both, I may venture the above observation, at least with you.

A dinner of grouse at this place came very opportunely after our keen ride of twenty-four miles over the prairie without once stopping; and, by way of varying our customary fare of bacon and corn bread along the road, we purchased a few brace of these fine

birds for twelve and a half cents a head, there being at hand a coop full of them just caught alive upon the premises. It was just sunset when, after riding about thirteen miles over a dreary looking prairie, we came suddenly to one of those *steppes* into which these singular plains sometimes break so beautifully; and, looking down over two broad platforms, which successively projected their flat surfaces and angular edges below us, beheld the Illinois river winding thro' the lowest meadow, and receiving its tributary, the Fox river, opposite the little village of Ottawa. It seemed to repose upon a rich alluvial flat with the rocky bluffs of the Illinois, rising in a regular line to the height of 70 or 80 feet immediately in the rear, while their rugged and varying outline, both above and below, towered oppositely to a much greater height. The warm light of the setting sun resting upon their mossy edges, and touching with freshness an evergreen that sprouted here and there among the cliffs, while the rising mists of evening imparted a blueish tint to the distant windings of the smooth valley below, gave an Italian softness to the landscape. But little in unison with the icy rigors that enchained the streams to which in summer it must owe its greatest beauty. A mile or two further brought us over the frozen river to the comfortable frame house from which this letter is dated.

Ottawa, which is situated a few miles above the head of steamboat navigation on the Illinois, is, from its central situation, gradually becoming a place of some commercial importance, though still a mere hamlet in size. It was within six miles of this place that the worst of the Indian horrors were perpetrated during the difficulties with the Sacs and Foxes in 1832. You must remember the newspaper accounts of every member of two families being butchered, except two young girls, who were carried into captivity, and afterwards recovered from the Indians.—There was a singular fatality attending this melancholy affair, which makes it worth while to recall some of the particulars. According to my informant, the heads of both families, who lived in the same or adjoining houses, had more than once removed their wives and children into Ottawa, upon false alarms of the approach of the Indians, and one of them, from some new warning on the very day on which the event took place, was again moving the united establishment in wagons to the same place of security, when he met the other, who so opposed and ridiculed the idea, that they returned together. An hour or two after they were at work within a few yards of the door when a band of Indians appeared, and with a triumphant yell surrounded the house in an instant. Armed only with their tools of husbandry, they did not hesitate to make an attack upon an enemy that outnumbered them, so as to make the attempt to get into the house and reach their rifles perfect madness. It is needless to add that they were shot down, tomahawked and scalped in an instant; not, however, as some say, before they had witnessed some of the atrocities practised upon the feeble members of their families. These, both before and after death, are too shocking, I may say too awful, to mention. "Why, sir," said an Illinois man to me, who was on the spot shortly afterwards, "those Indians behaved most *ridiculous*. They dashed children's brains against the door posts; they cut off their heads; they tore —" but the detail to which my informant applied so quaint an epithet is one that I would not think for a moment of giving you. I must not forget to add, that the two surviving females, after losing every near blood-relative in this horrible manner, have lately found legal protectors, and are now settled in life as respectable married women. I had previously even as far north as the borders of Michigan in Indiana, seen stockades erected in the open prairie as a place of refuge for the settlers, with other similar marks of the late border strife, but had no idea till this evening that I was approaching the seat of the bloodiest acts of the unhappy contest. The neutral Indians, who disappeared from this part of the country at the time, are now, I am told, dispersed again in large numbers over the neighborhood. They are perfectly harmless; but, though treated with great kindness by the new emigrants, there will probably never again be much confidence between them and the old settlers. The latter somehow seem to have long regarded the Indians as hereditary enemies, and the events of 1832 have given new vigor to dislikes which seemed to be gradually losing their rancor. A man who has to plough with a heavy rifle ready-loaded slung to his back, day after day, while he fears even to send his child to the spring for a pail of water, may be well excused for being warm upon a subject which must thus fill his thoughts and harass his mind throughout each hour of the day. It is, therefore, useless to argue with an

Illinois "Indian Hater." What cares he for the "lean famine, quartering steel, and climbing fire," which you tell him often beset the redman's wigwam before his ancestors made good their footing on another's land. He thinks but of the frantic outrages he has witnessed in his own day. He thinks of his often abandoned husbandry "while that the counter rusts" corrupting in its own fertility. He thinks of his butchered friends and neighbors, and asks bitterly how you could

"Look to see
The blind and bloody savage with foul hand
Defile the locks of your shrill shrieking daughters:
Your fathers taken by the silver braids
And their most reverend heads dashed to the walls;
Your naked infants spilt upon pikes,
Whilst the wad mother's with their howls confused
Do break the clouds."

An accumulation of horrid images which shows with what fearful fidelity Shakespeare would have painted Indian warfare had these wild tragedies of our day been acted in his.

Of books we have several, but not a word in their behalf to say, till after the election.

FOREIGN INTELLIGENCE.

LATE FROM FRANCE.—We have our Paris papers of 15th ult. inclusive, by the *Rhone*, from Havre.—From Spain and Portugal we have later accounts direct. From London the dates are to the 11th. Mr. O'Connell had demanded an investigation, by the House of Commons, of the charge against Mr. Shiel. The result of the demand is not stated.

The Gazette de France of the 15th inst., has this paragraph, of painful interest to Americans.

"General Lafayette is still confined by serious illness. He does not leave his bed, and his physicians forbid all but his intimate friends to enter his apartment."

PARIS, Feb. 14.—The Customs' Bill, presented to the Chamber of Deputies is at length published by the *Moniteur*, in Supplements, occupying 20 columns.—The following are its principal provisions:—The Bill proposes to admit raw spun cotton at 8fr. per kilogramme for single twist, and 10 fr. for double twist; gold and silver watches at 6 and 10 per cent.; Russian skins at 6fr. a-piece; chromate of lead and potash at 90fr. and 180fr. for 100 kilogrammes; foreign rum, arrack, and ratifia, at the same duties as other liqueurs. The duty proposed on wool in the mass is 10 per cent., and combed wool 30 per cent., *ad valorem*, without fixing any minimum. The actual duties on iron are reduced 1-5 from July 1st 1835, but the reduction will be effected in five years, at 4 per cent. per annum. The only concession to cast iron is the reduction of the minimum of the weight of pigs to 25 kilogrammes. There are greater or less reductions of the duties on a great number of dyewoods, spices, drugs, &c. The productions of China, Cochinchina and the Philippines, imported direct, will obtain a drawback of a fifth of the duties as established for the most favored foreign arrivals. Sugars from Pondicherry, are assimilated to sugars from Bourbon.—The tariff of arms in commerce is left to be fixed by Royal Ordinances. The charge for each seal (plomb) affixed at the Custom House, is reduced to 25 cts.

PARIS, Feb. 14.—On the 7th of next month, Constant Polari, alias Carrara, the person accused of having stolen the diamonds of the Princess of Orange, will be brought to trial before the Cour of Assizes for South Holland.

The French Chambers were occupied upon the Civil List. We perceive nothing in the debates worth noting.

The Constitutionnel of the 14th of Feb., states that on the preceding day, after long and fatiguing discussion the Chamber of Deputies had voted the law, (so warmly contested) for the liquidation of the old civil list.

Advices from Algiers are to the 30th of January. An expedition against some refractory bands of Arabs, had been successful—without hostility. After explanations from the French, the Arabs desisted from hostile acts, and promised to live in peace and harmony.

The Paris Times assails the Ministers—arguing that this is not a Representative government, where the Ministers represent the King's will before the Chambers, instead of the will and voice of the people.

ENGLAND.

The London papers are yet discussing the subject of what they term "*The Irish Row*," kicked up in the House of Commons by Mr. O'Connell. They attribute to O'Connell a design to destroy Shiel, as

the only member of his *tail* whom he has reason to fear as a rival.

Numerous petitions have been presented to Parliament, from the Dissenters, praying for liberty to register their own births and marriages, and for exemption from marriage fees.

LONDON, Feb. 10.—The following circumstances have appeared before the Portsmouth magistrates this week: The ship *Marianne*, Claassen, master, having on board 212 Polish refugees, bound to the United States, has been detained in this port, wind bound, five weeks. The ship was taken up by the Prussian Government, for the purpose of conveying these men from that country to America, under an agreement that on their arrival they were to be paid a sum of about sixty dollars each.—The ship was obliged to put into this port by stress of weather, and the Poles appeared to be very comfortable, and expressed their willingness to proceed to America, until Sunday last, when a Polish officer arrived from London, and communicated to them that the Poles of Harwich and Havre, who were similarly situated, had obtained permission of the French Government to land in France or Algiers, upon which the Poles here refused to proceed to America, and agreed to leave the ship on the following day. The necessary steps being taken on Monday for their leaving the ship, they peremptorily refused either to proceed to America or to leave the ship.

The next day, (Tuesday) the wind being favorable for sailing, the pilot gave directions for heaving the anchor, and as the crew were at the windlass for that purpose, the Poles rushed forward and forced the handsprakes from them, stating that they were determined the ship should not proceed. They took possession of the ship; and from their violent and threatening conduct, the Captain applied to the Civil Authorities for protection, as he could not put to sea without endangering his life. Depositions of the fact were taken, and communication had with the Secretary of State, and also with the Prussian Ambassador. Thus the case stands at present.—[Hampshire Telegraph.]

The Duke of Wellington has been installed Chancellor of the University of Oxford. It is stated that he pronounced his Latin address in a most excellent and impressive manner. It was classical in style, and in substance eloquent. He alluded, with much felicity to the occasion when Oxford conferred on him the Degree of Doctor of Law, in company with the Emperor Alexander, the King of Prussia, and their illustrious train, and expressed himself determined to defend the privileges of the University, which had so gratified his feelings in conferring upon him the high office with which he is now invested.

The last despatches from the Court of St. Petersburg give such a positive assurance of a continuance of peace that a reduction of the army is talked of in the higher circles. It is believed, however, that this measure will not take place till after the close of the Congress.

General Sir Colin Campbell, has been appointed to the Staff of the British forces in North America.

SWITZERLAND.

A body of Polish refugees who had been sent out from France, have lately attempted, with such Italians as they could get to join them, to make themselves masters of a fortress in Savoy. They were opposed, however, and most of them taken prisoners, and decrees passed to expel them from the Swiss territory.

ITALY.

Several arrests had taken place in Rome, but they are merely precautionary—to guard against troubles during the Carnival.

SWEDEN.

A Stockholm Journal of the 21st January, proclaims that capital the most prosperous in Europe, and congratulates the King of Sweden on his having relieved the country from the burden of a foreign debt.

TUESDAY, THREE O'CLOCK.—We have our London papers to 26th February, by the *Roscoe*.

Paris accounts are to the 23d—fears are expressed for the stability of the throne of Louis Philippe.—Lyons was in a state of great disturbance, from the workmen standing out for wages. Louis Philippe had issued an edict—foolish, because tending to excite hostility, without answering any effective purpose—to close the theatre at 11 o'clock. The edict is justified upon old usages taken up from the Bona parte and Bourbon times.

From Spain there are no special news, except the

resolute refusal of the ministry to permit *Mina* to return to Spain.

From Portugal the intelligence is that Miguel's troops were descending the left bank of the Tagus, and might thence annoy Lisbon. The war there is not by any means ended.

The Committee of Privilege, appointed by the House of Commons to examine into the charge against Mr. Shiel, had reported "their deliberate conviction of his innocence in respect of the whole matter," and Mr. Hill, on whose speech at Hull, we believe, the whole accusation was grounded, concurred entirely in the result, and expressed to the Committee "his deep and unfeigned sorrow for ever having given the charge circulation."

Gen. LAFAYETTE was still indisposed at the last dates from Paris.

The London Courier of the 24th contradicts a rumor circulating, that there was a schism in the Cabinet.

LIVERPOOL, FEB. 25.—The Pantaloon arrived at Falmouth on Thursday last, bringing letters from Lisbon to the 9th instant. The following is an extract of a letter dated Lisbon, February 8th:—

"The Miguelites, in great force, (about 3000 men) have marched down from Santarem, on the south side of the Tagus, and have appeared at Aldea Galega, just opposite to this city. I am informed they may be seen; and I do not doubt it. I have been told that some vessels of war have been firing on them all day. If care be not taken they will get possession of St. Ubes, and the fort of Almada, which is directly opposite the centre of the city. Without foreign interference, the war will be interminable; Miguel's troops stand by him, although they are neither half fed nor half clothed. This is not less true than surprising. Miguel has nearly the whole country in his favor."

The fact that Miguel feels himself strong enough to detach three thousand men to advance upon St. Ubes, would seem to argue that he entertains no fears for the safety of Santarem. The United Kingdom steamer disembarked four hundred and fifty Belgian troops on the 7th. They were immediately informed that their pay would be the same as the Portuguese troops, and that the agreement made with them before they embarked would not be abided by. At this they, naturally enough, became very discontented, and protested against their treatment as a dishonorable breach of faith, but to no purpose. About one hundred and fifty British subjects are daily marched through the streets of Lisbon, chained together in parties of about twelve, to work on the roads.—These are the free-born Englishmen who sailed forth to liberate enthralled Portugal from the grasp of an usurper and a tyrant! These rogues in irons have made a happy exchange; they have gone from English jails into foreign hulks. The liberators are converted into galley-slaves, and in this capacity they will certainly be useful in cleaning the streets of Lisbon.

Miguel is said to have offered an amnesty to Pedro's followers, promising to send the whole of the English and other foreign ragamuffins in Donna Maria's service to their respective countries. At the departure of the Pantaloon, this proposition had not been accepted by Pedro. The two principal officers in the Queen's service, the Duke of Terceira and General Saldanha, had quarrelled. The former, on quitting the army, was succeeded by Gen. Stubbs.

[From the London Courier of Feb. 24—evening.]

The French papers, as well as the letters, which have arrived from Paris, begin again to use the language of alarm in relation to the stability of the Government of Louis Philippe and the maintenance of tranquillity in France. The two subjects which at present have chiefly given rise to this uneasiness are, the strike of the workmen at Lyons, and the impolitic edict of the Prefect of Police at Paris to shut up all the theatres at eleven o'clock, which we mentioned on Saturday. When the whole people are ready to take fire, though willing to relapse into tranquillity, how monstrously absurd it is in this Prefect to throw a brand into the combustible heap. His foolish edict, too, comes immediately after the law for suppressing the public criers, which went to deprive the people of much excitement, which was not always mischievous, and to take away from them a source of amusement, in which they had long drank in some pleasure. The Prefect refers too, in his edict, to a variety of ordinances, issued in the hated times of the Bourbons, and under the arbitrary sway of Buonaparte, as the

justification of his measures, as if he thought they were the happy periods which the French ought to bring back. Thus he places that which is personally offensive, upon grounds which are still more offensive to the majority of those whom he undertakes to control. All this is, in our opinion, most melancholy and most contemptible in M. Gisquet, and it tends to confirm our conviction, that the administrators of the laws get into such a habit of looking exclusively into them to find rules for their conduct, that they cannot look beyond them, and never, therefore, acquire that wisdom, which events and circumstances teach. But it is quite clear, that the laws and ordinances of the Bourbon and Buonaparte Prefects of Police, are not calculated for the present state of men's minds in Paris. It is equally clear, that a new order of circumstances is continually arising in society, for which the legislators of the past age could not possibly provide, simply because they did not know, and did not foresee them. Thus the men who, like M. Gisquet, never will look for rules to events and circumstances, but always will look to antecedent edicts and ordinances, and always frame their conduct by the edicts and ordinances of their predecessors, must, of necessity, do a vast deal of mischief. They are the real authors of the painful convulsions which take place in society, inasmuch as they always oppose with violence those gradual and successive changes which, but for them, would probably be brought about calmly and tranquilly, and which society, like every created thing, is continually doomed to undergo. Their great mistake—for we do not impute corruption or guilt, or even a love of tyranny, to them, but ignorance—consists in supposing that their edicts and the edicts of their predecessors determine the events which, we say, they ought to study, in order to obtain the wisdom proper to Statesmen. This is a fatal mistake, which the events of the last fifty years in every part of Europe—for there is not one in which statesmen have not been successively obliged to bend to new and unforeseen circumstances—are well calculated to rectify. We hope that the successor of M. Gisquet, whoever he may be—and M. Gisquet cannot, without greater danger than a hundred Gisquets are worth, be retained—may be wiser, and more disposed to look at existing facts, than at the ordinances of a former period.

LONDON, FEB. 21.—Lord Althorp admits that the property of the church is much less than he imagined, and that from the returns, it only amounts to £3,600,000 a year—

Bishops' incomes	£ 158,527
Deans and Chapters' incomes	236,658
11,400 benefices	3,621,125
	£3,621,125

LONDON, FEB. 24.—A new treaty between Russia and Turkey, very much in favor of the latter was concluded at St. Petersburg on the 27th last month. By this treaty, that of Adrianople is materially modified; the amount of the debt due by the Porte is very much diminished; part of the principalities of Moldavia and Wallachia is to be given at once the Porte, and the remainder is to be given up on the execution of the conditions. The frontiers of Turkey on the side of Persia are to be considerably extended. This information is official.—[Spectator.]

THE TRADE TO CHINA.—The shipowners of the United States are under weighty obligations to the framers of the late orders in council, for the regulation of the British trade to China. These orders, in fact, impose discriminating duties in favor of the Yankees, and against the merchants of England. Were the principle on which they seem to have been drawn up acted upon in reference to our commerce to other parts of the world, the British flag would soon disappear from our docks and harbours. We have just been informed of one instance, which occurred at Liverpool the other day, of the injurious operation of these orders. Some British manufactured articles, for which freight had been engaged on board a British ship to Canton, and which had been consigned to a British house there, have been transferred to an American vessel, and are now consigned to an American merchant. The freight and commission, therefore, which would naturally have fallen into the hands of the English shipowner and merchant, will be pocketed by our American rivals; and the most provoking thing is, that this evil result is brought about by the ignorance and obstinacy of our own rulers.—The influence of Mr. Poulett Thomson must be weak in quarters where his advice ought to be followed for we cannot suppose for a moment that he is blind to the inevitable consequence of the Canton trade orders; although the great majority of his colleagues are incapacitated by their habits and education for a right understanding of the subject.—[Spectator.]

The constitution of the Cortes *por estamentos* not being generally known, our readers may wish to be informed that the Cortes, *por estamentos*, is a species of States General, which was anciently composed of the three Estates (*Estamentos*), or influential classes in the nation—namely, the Nobility, the Clergy, or rather prelacy, and the Deputies from a number of cities and towns which possessed the right of sending Members to this Parliament. These three orders sat in separate chambers, but the sanction of all was indispensable to give force to any legal enactment; but ever since the subversion of the rights of the Commons by Charles V., the Cortes were no longer the Representatives of the nation, but merely the King's Deputies, called together for a special object, such as to take the oath of allegiance to the heir apparent to the throne, &c. But previous to the reign of Charles V. the Cortes possessed more extensive rights and privileges than are possessed by any Legislative body in Europe at this day. At that time Spain was the greatest country in Europe; but the destruction of the representative system, and consequent introduction of a severe despotism, destroyed all the energies of the people, and all the resources of that fine country, and, from being a powerful empire, has degraded it to a state of misery, and a rank quite below its natural level amongst European nations.—[Herald.]

MR. SHIEL.—The annexed report was made in the House of Commons on the 14th of February.

It was received with cheers; and was followed by a frank and manly apology on the part of Lord Althorp to Mr. Shiel:

Charge against Mr. Shiel.

MR. GROVE brought up the Report of the Committee appointed to inquire into the charges against Mr. Shiel. There were cries of "read, read;" and the Clerk proceeded to read it as follows:

"The Committee of Privileges, to whom the matter of complaint was referred, arising out of a paragraph in the Examiner newspaper, dated Nov. 10th, 1833, hereby submit to this honorable House the following report. The paragraph in question, purporting to form a part of a public speech, delivered at Hull, by Matthew Davenport Hill, Esq., is as follows:—"It is impossible for those not actually in the House to know all the secret machinery by which votes are obtained. I happen to know this (and I could appeal, if necessary, to a person well known and much respected by yourselves,) that an Irish member who spoke with great violence against every part of that bill, and voted against every clause of it, went to Ministers and said, 'Don't bate one single atom of that bill, or it will be impossible for any man to live in Ireland.' 'What?' said they, 'is this from you, who speak and vote against the bill?' 'Yes,' he replied, 'that is necessary; because, if I don't come into Parliament for Ireland, I must be out altogether, and that I don't choose.' Cries of 'Name,' and 'No.' Consider for a moment—can I do it? ('No.' 'Yes.') That is a point for my consideration. I have a great respect for every one here; but, if every one in the room were to hold up his hand for it, I would not do it. The secret is not my own. If he had told it to me I would have said, 'Mark, I will keep no such secret as this; I'll publish it to the world.' But if I name the member, I put it into the power of the individual who made that declaration to know the gentleman who told me." Your Committee, on entering upon the delicate and embarrassing duty imposed upon them, ascertained from Mr. Hill that, though he could not admit the entire accuracy of the above paragraph, as part of what he had publicly spoken at Hull, nevertheless, he recollected to have publicly charged an Irish member of Parliament with conduct similar in substance to that which the paragraph described. The Irish member so alluded to was Richard Lalor Sheil, Esq., Member of Parliament for Tipperary, and Mr. Hill states the charge to the best of his belief, to have been substantially as follows:—"That Mr. Sheil made a communication respecting the Irish Coercion Bill to a person connected with government and others, with intention thereby of promoting the passing of the Coercion Bill, and having a direct tendency to procure that effect, whilst his speeches and votes in the House were directed to the rejection of the Coercion Bill. Such was the substance of the allegation into which the committee proceeded to inquire. Two witnesses were called before them at the suggestion of Mr. Hill, and others were about to be examined, when Mr. Hill himself, finding the testimony different from what he had expected, freely and spontaneously made a communication to the committee that he had come to the conclusion that the charge against Mr. Shiel, of having directly or indirectly intended to communicate to government any opinions in opposition to those he

had expressed in the House of Commons, had no foundation in fact; that such charge was not only incapable of proof, but that, in his sincere belief, it was totally unfounded; that he was induced to make mention of it in a hasty and unpremeditated speech, under a firm impression that he had received it on indisputable evidence; but that being now satisfied of the mistake into which he had fallen, and being convinced that the whole of the charge was wholly untrue, he came forward to express his sincere regret at having given it circulation. Mr. Hill added that if there was any way, consistent with honor, by which he could make reparation, and heal the wound he had inflicted, he should be happy to do so. The Committee felt highly gratified that they could exculpate the honorable member from the charge in consequence of the voluntary statement of the honorable member for Hull. Neither of the witnesses who appeared before the Committee deposed to facts calculated to bear out the allegations against Mr. Sheil, nor did the statement go to impeach his character and honor in any way, nor in any manner whatever. The committee have no hesitation in declaring their deliberate conviction that the innocence of Mr. Sheil, in respect to the whole matter of complaint referred to their investigation, is entire and unquestionable. The Committee feel bound at the same time to declare that the statement of Mr. Hill was made under a sincere but mistaken persuasion—they derive this confidence as well from his character as from his candid admission, and the evident anxiety to avoid exaggeration or misstatement which he observed throughout his statement."

The only additional item with respect to Portugal is, that the *Duke of Terceira* had been displaced from the command of the army before *Santarem*, by reason, it was conjectured, of the jealousy entertained of him by the Count Saldanha. General Stubbs, an Englishman, was his successor.

PARIS, FEB. 21.—Our legitimate journalists have been strongly excited at the despatch or despatches which informed them of the reception given to Marshal Maison by the Emperor of Russia, simultaneously with the arrival of the current reports of Prince Metternich's. The Prince, like the Emperor, regards the King of the French as the only efficacious guarantee for the peace of Europe, and the only powerful barrier which can preserve society from the invasions of anarchy.

General Lafayette is still indisposed. At the funeral of M. Dulong, which the old General wished to attend on foot, his fanatics, or perhaps his enemies, made an attempt to carry the hero of the two worlds in triumph. The old General did not seem to relish this. The enthusiasm of the surrounding multitude appeared to him rather equivocal, and he was well pleased when a picket of the Municipal Guard released him from the premature apotheosis. The circumstance, however, has shaken him much and though not in immediate danger, he is in a languishing state, and at his advanced age every excitement is dangerous. His death would be an event of importance, and his obsequies might give rise to scenes of disorder, if the excellent spirit of the National Guard of Paris did not afford a guarantee for the preservation of public tranquility.

From Portugal accounts to the 20th Feb., direct, are received at Boston, by a vessel from St. Ubes.—An express reached the latter place—distant not more than twelve or fifteen miles—from Lisbon, that a battle had been fought with the Miguelites, in which they were routed with great loss.

The last accounts, via England, were that a detachment of Miguel's troops were marching down the left bank of the Tagus, and were nearly opposite Lisbon—hence the greater probability that the St. Ubes rumor is true.

SUMMARY.

CITY OF BROOKLYN.—The bill constituting Brooklyn a city, which has passed the Assembly, has been for some time discussed warmly in the Senate. On Friday, (according to an Extra from the Albany Argus,) the Senate being in Committee on that bill, Mr. Van Schaick proposed the following clause:

"But the personal property of any person or persons occupying a counting house, warehouse, office, store or shop, and transacting his or their business in the city of New York, and whose property shall lie in the said city, or be a part of his business trans-

actions therein, although he may lodge or have his dwelling house in the city of Brooklyn or elsewhere, shall be assessed and subject to rateable taxation in the city of New York, in the same manner as other personal property is by law assessed and taxed therein."

In introducing his amendment, Mr. Van Schaick read the report to the Comptroller of the city of New York, in regard to the nature of the improvements at Brooklyn, being dwelling houses of a good class, occupied principally by merchants and dealers lodging in the village of Brooklyn at night, and coming over to New York in the morning, entering their stores, transacting their business during the day and returning to Brooklyn at night, and by this means escaping taxation on personal property, lying in the city of New York, to a large amount.—Mr. V. S. observed that the evil was increasing to such an extent, that its importance would force itself upon the public attention, and he alluded to individual cases. It would not be endured that persons carrying on a regular business in the city of New York, and making large sums of money in trade, should enjoy the benefit of an expenditure of \$200,000 per annum for streets, lamps, watch, fire department and courts of justice, and the ample protection of their property in trade, and should in consequence of having their dwellings in Brooklyn, escape making any contribution whatever to the public burthens of the city, while every trader and mechanic was assessed and paid his share of the taxes.

There were instances of persons escaping taxation on many hundreds of thousands of dollars, and in the course of twenty years, it might be very possible that with an increased number of ferries from Old Slip and other places to the new part of Brooklyn, one quarter or one third part of the business population of New York, residing in the first ward, would become the residents or lodging population of Brooklyn. Would such a state of things be endured? Is it consistent with any principle of justice? The first ward pays more than a fourth part of the whole taxation of the city. Are we to give up a large portion of this revenue, for the purpose of fostering the commercial rival, as some call it, which you are going to create? It must not be done. The upper wards of the city would feel themselves sorely oppressed by a decision which would lead to that result.

[Mr. V. S. supported his amendment with great zeal, and read several letters in relation to the subject, which he had received from the committee of the corporation of New York.]

The amendment was adopted.

On Saturday this amendment was reconsidered, and though warily sustained by Mr. Van Schaick, was eventually rejected.

Mr. Van Schaick renewed his proposition in the Senate, but only four ayes supported it.

LEGISLATURE OF NEW YORK.

Six Million Loan.

Mr. Morris, from the Joint Committee to which was referred the Special Message of the Governor, made a Report, responding to the charges of the Governor against the United States Bank, and concluding with a bill providing for the creation of a five per cent. STATE STOCK amounting to SIX MILLIONS OF DOLLARS, redeemable within twelve years. Four Million of Dollars of this Stock is proposed to be loaned to the Banks in the city of New York, and Two Millions to be sent to the Loan Office in the different parts of the State, to be loaned when the Supervisors of the respective Counties determine that they are in need of such aid. The \$4,000,000 given to New York, is to be loaned to the City Banks.

The bill creates a Board of Officers to manage this Stock, consisting in part of State Officers, and of persons to be appointed by the Governor and Senate.

Mr. Morris also introduced a bill allowing the Banks which may borrow this money, to discount upon it as additional capital.

THE SIX MILLION LOAN.—By the bill "to loan the credit of the State to the people thereof" for SIX MILLION DOLLARS, it is left discretionary with the Commissioners whether or not to issue the stock.—The bill will unquestionably pass. The Commissioners named by the bill, are the Comptroller, the Attorney General, the Bank Commissioner appointed by the Governor, and three other persons to be appointed by the Senate on the nomination of the Governor. The Act is to go into effect immediately on its passage.

Steamboat Cause.—The Superior Court, before

Judge Hoffman, was occupied on Tuesday and Wednesday, with the trial of the suit brought by Henry K. Fountain, against Robert Dunlop, proprietor of the steamboat *Dewitt Clinton*, for the value of the petiaugre *Hudson*, owned by the plaintiff, and which was sunk on the evening of the 9th of November last, in the North River, near Catskill landing, in consequence of the collision of the two vessels in the dark. The jury yesterday morning returned a verdict of \$600 for the plaintiff. Another suit is pending against the same defendant for the value of the *Hudson's* cargo of oysters, which belonged to Mr. Simondson, the master.—[Courier.]

APPOINTMENTS by the Governor and Senate, Mar. 25. New York—Phineas Lockwood, pilot by way of Hell Gate; Gabriel Winter, commissioner of deeds. Kings—Zachariah Cooper, auctioneer.

Queens—Henry J. Hagner, surrogate; Benjamin W. Strong, first judge; Joseph Dodge, judge of county courts; Robert Mott, Isaac Wright, Edward Starkins, Warren Mitchell, William M. Weeks, Samuel Mott and Samuel Lowerre, auctioneers.

The Common Council of Troy have voted a sail of Colors to the new ship *Troy*, in compliment to the name she bears. The *Troy* is a very fine ship, of five hundred and thirty tons burthen, belonging to Josiah Macy & Sons. She is furnished with a beautiful cabin though designed for the general carrying trade between this country and Europe.

Fatal Accident.—On Thursday last, Mr. Bear of Hanover, Pa. in approaching this city with his team, was thrown from the saddle horse, in consequence of the horse taking fright by the flying of a kite, and the unfortunate man fell in such a position that both wheels of the wagon passed over his body, occasioning his death in about an hour.

On Tuesday, a child of Mr. John Wilson, of Mountjoy township, Adams co. Pa. aged about 3 years, was found dead in a spring near the dwelling of the family. He had a small bucket with him, and it is thought that in attempting to dip up water, the child lost his balance and fell into the spring—where, no one being in reach to save him, the consequence was loss of life. When discovered, it was supposed that the body had been nearly an hour in the water: all attempts to resuscitate it, were therefore vain.—[Balt. Patriot.]

The estate of the late D. McCormick in Wall street, just above Pearl, sold yesterday by auction for \$46,500. The estate is 36 feet on Wall street, and from 69 to 81 feet deep. The building is of no value.

This estate a few months ago, would have sold for nearly fifty per cent. more. Fifty thousand dollars has been more than once refused for it.

The body of a man was picked up off Sewell's Point, on Friday, by the revenue cutter *Jefferson*, Capt. Webster, which appeared to have been in the water 5 or 6 days, and is thus described by Capt. W.:—Height about 5 feet 5 or 6 inches; dark complexion, large black whiskers—dress, a blue jacket, yellow oil cloth trousers, a red shirt over a white one, the latter marked J. Perry; the figure of a ship of war, the word *Liberty* and the initials T. C. marked on one of the arms in Indian ink. There was a hole in the forehead of the deceased between the eyes, apparently made by a pistol ball, and two smaller ones on the side of the nose, supposed to have been caused by shot—also, a severe bruise on the temple. The body was interred by Capt. Webster on Sewell's Point.—[Norfolk Herald, 31st ult.]

Sheep killed by Cats.—The last Lancaster Examiner says:—"Incredible as this may sound, we have good authority for saying the deed has actually been perpetrated in this county. Several cats, of the common species; with their progeny, have for three or four years past made an old stone quarry in Martic township their abiding place, and in that time it would seem have relaxed to the wild state and acquired the ferocious and predatory habits natural to their tribe. A short time ago, some of them were seen in pursuit of a full-grown sheep belonging to the flock of Mr. Martin Herr, of that vicinity. They soon overtook it, dragged it to the ground, and before the person who witnessed the scene could reach the spot, they succeeded in so lacerating the poor animal's throat that it bled to death in a short time. It required considerable exertion to drive them off. A dog, subsequently sent in pursuit of them, caught one, but would probably have been himself worsted in the conflict that ensued, had not the owner come to his rescue. It is said they also pursued a small boy some time ago, and followed him a considerable distance, as is now supposed with deadly intent.

THE DEATH-BED OF WILLIAM WIRT.—The Richmond Compiler of the 17th inst. contains the affecting account of the last illness of Mr. Wirt, written by a gentleman who attended him during that illness. We proceed to extract the principal part of it.

"On the evening of Saturday, the 8th instant, he was in playful spirits, and sanguine of the success of an argument which he was to make in Court on Monday. He felt better satisfied with his preparation, he said, than with any he had made for years before. On Sunday, he walked to the Capitol to Church—it was a damp chilly day, and the Representatives' Hall was crowded and warm. To go immediately from it into the cold, damp air, and walk slowly, as he did, a mile to his lodgings, might have been deemed imprudent in one whose health was less precarious than his then seemed.

"That night he complained of a slight indisposition, and in the family worship of the evening, prayed with an unusual favor, and seemingly a forboding spirit, which he communicated not save to his God. But even this was sufficient to excite vague apprehensions in a family always ready to note and to dwell upon whatsoever might seem to bode danger or safety to a friend so dear.

On Monday he was confined to his room; no serious apprehensions were entertained, but a physician was called in—it was only a cold. On Tuesday he was worse, but we feared not the result. He complained of stiffness of the muscles of the throat and swelling of the glands—milk poultices were applied to his face, but they gave no relief. On Wednesday he was much worse, so much as to excite alarm; on the evening of this day, it was first discovered that the disease was Erysipelas, "a new enemy," of which Mr. Wirt then expressed his fears. "It was not the foe with which he had been so long accustomed to contend."

His constitution was too weak, as the physicians apprehended, to stand the vigorous treatment which would have been most efficient in destroying the disease. By Friday, the alarm had become very serious—the door was crowded by anxious inquiring friends, and those who met in the street asked from each other the latest intelligence. The affliction of the family was extreme, but still there was hope. On Saturday, his daughter and son-in-law arrived from Baltimore, and were shocked to find the case so much worse than their worst fears.

Scarcely a glimmer of hope was left to us, but this feeble ray was most anxiously watched and cherished. When over-shadowed by so deep a gloom, the least of the twinkling stars in the firmament is more precious to our sight, than is the sun itself in the bosom of an unclouded day.

Death, from the first day of his illness, had continued to approach with a steady pace, and in a form more than usually hideous. The fine countenance so bright with intellect, so beaming with benevolence, was sadly altered—by the disease partly, and partly by remedies so fruitlessly applied. The eyes had lost their speculation—the eloquent voice was hushed—the divinity had departed from the temple, and its walls were defaced, but life still lingered, loath to abandon a habitation which had so long given to a thing in itself so little desirable and so worthless, beauty, purity and worth.

The attending physicians were Doctors Hunt and Hall; none could have been more anxiously attentive; the latter staid by him every night of the last four or five.

About noon on Monday, consciousness returned; and he had power to speak a few words. Nature had made a last effort to permit him to take leave of his family and friends, to give assurance that he died in Christian hope, and to join them in prayer to his God. The Rev. Mr. Post officiated. In so much of the prayer as related to his family and his own acceptance with Heaven, he seemed heartily to join; but when a petition was offered that he might be restored to health, he audibly dissented—"No, no!" He had done and suffered enough in this contentious world, and was entitled to the release, and the transfer to a higher existence, which the just and good are authorized to expect.

It was now become manifest, even to the most sanguine, that recovery was beyond the remotest probability. He was too shining a mark for death longer to miss. All that was left to us was, to smooth his passage to the tomb—to moisten his dry parched lips and tongue, and perform such little offices of affection as might soothe his hard sufferings.

During the last eighteen hours, he was tranquil as a child. Breathing and warmth were the only evidences of life—no motion, no pain, no consciousness—there lay the wreck of WILLIAM WIRT.

Three friends besides the Clergyman, attended his

bed side during the night—his family, too, worn as they were by nearly a week's watching, could not be induced to take repose. Anguish and affection gave them strength to bear what would have exhausted the strongest men. It was a night long to be remembered—a night of silent, despairing sorrow, which conveys to the heart a language never to be forgot—a language which is not for a pen like mine to transcribe.

Tuesday morning breaks upon the scene still unaltered, save that life flittered more faintly and all pulse was gone. About 11 o'clock the breathing became gradually more distant and more feeble—are suspended or imperceptible—another breath—he's gone? So calmly, so imperceptibly did he make his exit, that the precise moment of his departure could scarcely be marked—without a sigh or a struggle his bright spirit has departed from amongst us, to a state of existence higher, mightier and more glorious.

Upon a highly excited mind, a slight incident will sometimes make a deep and lasting impression. As the last flickerings of life were failing—while his whole family, and the friends who had watched with them, grouped around his bed, and in silent, deep attention to the awful scene, all held their breath, and their hearts and pulse stood still, a few soft, low notes from a pet bird, which had before been so silent that its presence in the room was unremarked, fell with startling sweetness on the ear. Only once before during his illness, had it been known to sing. On the preceding day, at the conclusion of the last act of devotion in which he ever joined, these same soft notes had mingled with the solemn 'Amen.'

Eloquent extract from a Review of the Life and Writings of Fenelon, by Dr. Chauncy.

The common idea is, that overwhelming emotions, the more they are experienced, can the more effectually be described. We have one strong presumption against this doctrine. Tradition leads us to believe, that Shakspeare, though he painted so faithfully and fearfully the storms of passion, was a calm and cheerful man. The passions are too engrossed by their objects to meditate on themselves; and none are more ignorant of their growth and subtle workings than their own victims. Nothing reveals to us the secrets of our own soul like religion; and in disclosing to us, in ourselves, the tendency of passion to absorb every energy, and to spread its hues over every thought, it gives us a key to all souls; for in all, human nature is essentially one, having the same spiritual elements, and the same grand features. No man, it is believed, understands the wild and irregular motions of the mind, like him in whom a principle of divine order has begun to establish peace. No man knows the horror of thick darkness which gathers over the slaves of vehement passions, like him who is rising into the light and liberty of virtue. There is indeed a selfish shrewdness, which is thought to give a peculiar and deep insight into human nature. But the knowledge, of which it boasts, is partial, distorted, and vulgar, and wholly unfit for the purposes of literature. We value it little. We believe, that no qualification avails so much to a knowledge of human nature in all its forms, in its good and evil manifestations, as that enlightened celestial charity, which religion alone inspires; for this establishes sympathies between us and all men, and thus makes them intelligible to us. A man imbued with this spirit, alone contemplates vice, as it really exists, and as it ought always to be described. In the most depraved fellow beings he sees partakers of his own nature.—Amidst the terrible ravages of the passions, he sees conscience, though prostrate, not destroyed, nor wholly powerless. He sees the proofs of an unextinguished moral life, in inward struggles, in occasional relents, in sighings for lost innocence, in reviving throbs of early affections, in the sophistry by which the guilty mind would become reconciled to itself, in remorse, in anxious forebodings, in despair, perhaps in studied recklessness and cherished self forgetfulness. These conflicts between the passions and the moral nature are the most interesting subjects in the branch of literature to which we refer, and we believe that to portray them with truth and power, the man of genius can find in nothing such effectual aid, as in the development of the moral and religious principles in his own breast. Genius, intellect, imagination, taste, and sensibility, must all be baptized into religion, or they will never know, and never make known, their real glory and immortal power.

We learn, says the Baltimore American of yesterday, from an unquestionable source, that large remittances from the Union Bank of Tennessee have

been received within a few days, for the redemption of its notes made payable at the Bank of Maryland, and that these funds have been forwarded to Philadelphia. It is probable that arrangements will soon be made for their proper application in Baltimore.

Naval.—The U. S. ship *Falmouth*, Capt. Spencer, bound to West Indies, sailed from Hampton Roads 26th inst.

The two Austrian frigates with Polish exiles, to the number of 245, arrived below last Friday.—We have not heard that any arrangements have been made either by the public authorities, or private individuals, for putting these ill-fated exiles, in the way of procuring a living. Indeed, at this moment, when thousands of our citizens, willing and anxious to work, are unable to find employment, we fear that it will be difficult to provide for this new accession.

Commodore Ridgely despatched a barge next morning, offering to these frigates the usual hospitalities of the port.

THE POLISH EXILES, who have come hither in the Austrian frigates, *not only without their own consent* as it is understood, but protesting solemnly against, being forcibly torn from Europe and thrown destitute upon a land of whose language they are ignorant and where they will be without any means of existence, are entitled to the sympathy of this community.

These unfortunate men—as we learn from the writer of the annexed letter, one of their countrymen—were gathered together from different parts of Austria—passed from brigade to brigade down to Trieste, and there, being each furnished with a great coat, a pair of trousers, and one or two other necessities, sent on board the frigates—and thus were brought away forcibly from Europe. They are each to receive here a sum of about \$22: there is only one female, seven or eight officers, and the rest soldiers.

The first steps should be to provide these people with some clothing, and an asylum, so that they may not be obliged to prowl about the streets, or be stripped of their little money by persons taking advantage of their ignorance of our language, &c.—Then time might be taken for making ulterior arrangements.

Among these people are some who have been farmers: they may find employment, we presume, with our blacksmiths. The great mass, however, have only their stout arms to rely upon. Their case, we are sure, will excite the sympathy of our citizens, to whom we commend the annexed appeal of M. Gerard:

To the Editor of the New York American.

SIR—It is in the name of 240 Polish exiles that I ask through your Journal, the opportunity of making an appeal to your fellow citizens. Emboldened by the recollection of the many kindnesses which Americans have lavished upon me, during the eighteen months that I have dwelt among them, I address myself to their hearts, in the full conviction that they will not be insensible to that compassion, which constitutes now the whole dependence of my ill-fated countrymen. May they in their turn experience the blessed fruits of that benevolence, which has so much contributed to ameliorate my condition. Especially, may they be permitted to draw from that source, which the charity of the ladies of New York so abundantly supplies. Soon then would the wretched state of destitution in which they now are, be changed for one less discouraging—and on our part, we Poles, will know how to acknowledge the aid that shall be extended to our misfortunes.

I have the honor to be, Sir,

With the highest consideration,
Your devoted servant,
GERARD,

Antient Polish Officer.

New York, 31st March, 1834.

Subscriptions for the succour of these exiles will be received at the residence of Mr. GERARD, 33 Chapel street.

Since the above was in type we observe, with much

pleasure, that the Common Council have taken steps to ascertain the circumstances, and devise means for the support, of these exiles.]

They have been landed at Castle garden, where they are for the present quartered.

[FOR THE NEW YORK AMERICAN.]
TO M—

That little blossom of the early spring,
Which you so kindly did receive from me,
Is its soft name is ever whispering,
All that I can or ought to ask of thee.

Al could I feel, in after years of sorrow,
That in thy memory I should hold a place,
From that sweet feeling, my fond love would borrow,
A joy that sorrow's self could ne'er efface.

A gleam 'twould be, of glad and sunny brightness,
And it would come in many a gloomy hour,
To cheer my darkened spirit with its lightness,
And woo it back from Melancholy's power.

Then bid my heart that flattering hope to cherish,
In all the changes of my future lot,
Say that my image shall not wholly perish,
Oh tell me that thou wilt "forget me not."

Wednesday night, March 18.

NOTICE TO MANUFACTURERS.

SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 18, 1833. A29 d RMAF

TO RAILROAD COMPANIES.

PROFESSOR RAFINESQUE, of Philadelphia, will undertake to build CARS that will carry along their own railway, and may be used on level M'Adam roads. They will save ten millions of money to be wasted on 1000 miles of iron railroads to be laid in the United States within a few years, and dispense with tracks and double tracks. These Cars may be drawn by horses or steam. He claims to have discovered them ever since 1825, by his caveats filed in the Patent Office. Apply, post paid. 31 R J M & F

RAILWAY IRON.

Ninety-five tons of 1 inch by 1/2 inch.	Flat Bars in lengths of 14 to 15 feet counter sunk holes, ends cut at an angle of 45 degrees with splicing plates, nails to suit.
300 do. 1 1/2 do. 1/2 do.	
40 do. 1 1/2 do. 1/2 do.	
900 do. 2 do. 1/2 do.	
800 do. 2 1/2 do. 1/2 do.	
soon expected.	

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axles of 2 1/2, 3, 3 1/2, 4, 5, 6, and 7 inches diameter for Railway Cars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments and Incorporated Governments, and the Drawback taken in part payment.

A. & G. RALSTON.
9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them. d71meowr

LOCOMOTIVE ENGINES.

THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1/2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burdens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company, **WILLIAM NORRIS**, Secretary.

December 24, 1833.
For further information on this subject see No. 49, page 772 of this Journal.

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads.
No. 264 Elizabeth street, near Bloeker street,
New-York.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlem Railroad, now in operation. J25 tf

RAILROAD CAR WHEELS, BOXES AND OTHER RAILROAD CASTINGS.

Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.

J8 **ROGERS, KETCHUM & GROSVENOR.**

NOVELTY WORKS,

Near Dry Dock, New-York.

THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m19



INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

EWING & HEARTT, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewing & Heartt.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable. They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit Levels, and Surveyors' Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewing & Heartt.—As you have asked me to give my opinion of the merits of those Instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprise so well merits, I remain, yours, &c.

B. H. LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any person desirous of perusing the same. m3

TO STEAMBOAT COMPANIES.

PROFESSOR RAFINESQUE, of Philadelphia, offers his services to render steamboats incombustible and not liable to sink, even by the bursting of boilers, or striking against snags, sawyers and rocks. This will save many boats, much property, and the lives of hundreds every year. Those who neglect this easy improvement, deserve to be neglected and deserted by the public as unmindful of safety. Apply, post paid.

TOWNSEND & DUFFEE, of Palmyra, Manufacturers of Railroad Rope, having removed their establishment to Hudson, under the name of Duffee, May & Co. offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jarvis, Esq., M. & H. R. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York; }
January 29, 1833.

ALBANY SEED-STOCK AND HORTICULTURAL REPOSITORY.

The subscriber having resumed the charge of the above establishment, is now enabled to furnish gardeners and others with FRESH GARDEN SEEDS, upon very favorable terms, and of the growth of 1833, warranted of the best quality.

The greatest care and attention has been bestowed upon the growing and saving of Seeds, and none will be sold at this establishment excepting those raised expressly for it, and by experienced seedmen; and those kinds imported which cannot be raised to perfection in this country; these are from the best houses in Europe, and may be relied upon as genuine.

It is earnestly requested whenever there are any failures hereafter, they should be represented to the subscriber; not that it is possible to obviate unfavorable seasons and circumstances, but that satisfaction may be rendered and perfection approximated.

Also—French Lucerns, White Dutch Clover, White Mulberry Seed, genuine Mangel Wurzel, Yellow Locust, Ruta Baga, and Field Turnip Seeds, well worth the attention of Farmers.

W. THORNBURN.

347 N. Market st. (opposite Post Office.)

Catalogues may be had at the Store; if sent for by mail, will be forwarded gratis. Orders solicited early, as the better justice can be done in the execution.

Mr. Thornburn is also Agent for the following publications, to wit:—

NEW YORK FARMER and American Gardener's Magazine; MECHANIC'S MAGAZINE and Register of Inventions & Improvements.

AMERICAN RAILROAD JOURNAL and Advocate of Internal Improvements; and the

NEW-YORK AMERICAN, Daily, Tri-Weekly, and Semi-Weekly; either or all of which may be seen and obtained by those who wish them, by calling at 347 North Market street, Albany.

SURVEYORS' INSTRUMENTS.

Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by

E. & G. W. BLUNT, 154 Water street, corner of Maidenlane.

ENGINEERING AND SURVEYING INSTRUMENTS.

The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principle of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new; among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy; also, a Railroad Goniometer, with two Telescopes; and a Leveling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested:—

Baltimore, 1839.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a revolving telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,

JAMES P. STABLER, Superintendent of Construction of Baltimore and Ohio Railroad.

Philadelphia, February, 1839.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors.

E. M. GILL, Civil Engineer.

Germanstown, February, 1839.

For a year past I have used instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.
German and Norristown Railroads.

FOREIGN VARIETIES.

Chinese Mode of Computing.—The Chinese method of computing is by a kind of abacus, which they call a *Suanpian* "counting board." It consists of a frame of wood, of various sizes, divided into two, unequal compartments, by a bar placed crosswise at about one-third the length from the top. Through this bar, at right angles, are inserted a number of parallel wires, and on each wire, on the lower compartment, are five moveable balls, and in the upper two. These wires may be considered as the ascending and descending powers of a numeration table, proceeding in decimal proportions; so that if a ball on any of the wires in the larger compartment, be placed against the middle bar, and called unity or one, a ball on the next wire above it will represent ten, and one on the next one hundred; so, also, a ball on the next lower, one hundredth; and the balls on the corresponding wires in the smaller compartment will, in the same manner, represent five, fifty, five hundred, five thousand, five hundredths, &c. the value or power of each of those in the smaller division, being always five times as much as those in the larger. In China almost every trade has a distinct system of secret numbers, that is, instead of using the proper characters for designating prices, they adopt other characters, by which they arbitrarily express their meaning, so as to be understood only by persons of the same trade.—[From Montgomery Martin's History of the British Colonies, Vol. I., Asia.]

Mr. Picken.—Mr. Andrew Picken, the author of the *Dominie's Legacy*, and other popular works of fiction, whose premature loss we mentioned with regret several weeks ago, had prepared for the press before he began his last published work, *On the Legends of Ancient Families*, an historical novel, called the *Black Watch*, which has since been published by his son. It is, we have heard, the only legacy which, at his unexpected death, the author could leave to his orphan family, and, though a great addition to his own literary reputation, can only be made productive as a pecuniary inheritance to his children by the favor of the public. We ourselves have neither space nor time to enter upon a detailed examination of its merits, but we can safely recommend it as one of the most interesting and graphic specimens of the kind of composition to which it belongs. It is founded on the history of the first raised Highland regiment, (called the *Black Watch*, afterwards the 42d,) which was marched from Scotland to London in 1743, and which mutinied, on being ordered, contrary to its engagements, to proceed to the colonies. The author's minute knowledge of the Highlands of Scotland and of the Highland character, joined to his assiduous study of the manners, political sentiments, and social condition of the south at that epoch, has cast the air of historic truth round one of the most powerful and pathetic fictions which has recently appeared. Those who have perused the former works of the author will easily give the preference to the *Black Watch* above them all, though its reader had not, in addition, the melancholy satisfaction of assisting his bereaved and disconsolate family.

[From the Morning Herald.]

It would seem, from what took place, last week at the Westminster Sessions, as well as on a previous adjournment-day, that the game of "Cheating the Justice" is not confined, as might have been imagined, to the low tap-rooms of the metropolis, but is actually played upon, and acted in the presence of their Worshipships themselves. We allude, as most of our readers must be aware, to the truly farcical and disgusting proceedings relative to the indictment against a gang of gamblers in St. James's, who appear to have "Cheated the Justice" in the most open, barefaced manner, and that without in any degree exciting the smallest Magisterial ire, while all that the parish of St. James gets by the prosecution is a heavy lawyer's bill to pay, and the mortification of being laughed at for their pains. It is very easy for professional persons probably to define, and, after their manner to justify the quirks and quibbles by means of which this disreputable result of a criminal proceeding is brought about; but to plain apprehensions it admits of but one solution, and that is, that persons having money enough know how to purchase the means of extrication from the maze in which the less fortunate, in point of wealth, find themselves irredeemably involved. This, we regret to say, has been, at all times, from the imaginary age of *Peckham and Lockit*, and probably long before it, down to our own, but too frequently the case. On the occasion in question the process is described to have been a very simple one—viz., witnesses who were bound in recognizances of 20*l.* each to appear, were paid 100*l.* each to stay away, which amounted

to a premium of 400 per cent. in addition to an exemption from exposure, and from that badgering which they naturally enough expected to undergo. But we put it to the good sense of those who have the regulation of such matters, whether such a state of things should be allowed to exist, as that one of the most offensive and audacious of crimes should thus be allowed to purchase for itself impunity, and the solemn finding of a Grand Jury be thus rendered nugatory and ridiculous? There is, at least, we should imagine, one very obvious way of lessening this chance of escape by taking much higher recognizances for appearance. In answer to this we shall probably be reminded of excessive bail being contrary to Magna Charta and the Bill of Rights; but, strictly speaking, bail was never contemplated after the finding of a Grand Jury, and both policy and justice require that in such cases the trial should be immediate, or, if postponed to accommodate the accused, should be upon security at least commensurate with the punishment if found guilty; and what is 20*l.* to the keeper of a modern hell, who frequently clears by his system of plunder 1000*l.* at a sitting? But if the law, as now administered, is not found strong enough to reach this growing and frightful evil, is it not high time that it was rendered so? We are not great admirers of the summary powers invested in Magistrates—at least to the extent to which in modern times they have been carried, and should be therefore slow to counsel their extension; but, feeling as we do, how much the general welfare is compromised in the continued existence and increase of the description of houses so aptly termed "hells," in this metropolis, we should certainly say that the same power which can consign a mere suspected person to imprisonment, without trial, might be permitted to deal in some such summary way with those open public robbers, and corruptors of public morals. This, however, is merely upon the presumption that the law, as it now stands, cannot be made available for that purpose. This impression we rather gather from the result than from our own conviction of its unavailability. For ourselves, we greatly doubt the earnestness of those who have hitherto taken it in hand. Justice, they say, is blind, and "blindman's buff" may only be another name for "Cheating the Justice."

Each Nation a Distinct Skull.—While traveling in foreign countries I made a collection of the skulls of different nations, (the greater part of the collection I had the pleasure of presenting to the Asiatic Society Museum, at Calcutta, where they may now be seen,) and it is exceedingly curious to observe what a marked configuration the crania of diverse people exhibit, even among nations with scarcely a perceptible natural boundary between them. The most striking example noticed was the difference between the Bengalee and the Burmese; the skull of the former possesses a greater occipital protuberance than that of any people I have ever met, it is, in fact, semiglobular, and the whole skull extraordinarily small, divested of any angular or rugged projections, and of remarkably thin lamina; (these observations are founded on examinations of hundreds of the Bengalee skulls; the cranium of the latter (Burmese) possesses what I have never found in any other nation—a perfectly flat occipital bone, so much so, that any Burmese skull will rest on a broader and firmer base when placed with the face upwards, than any other position. As if to compensate for the flatness of the occipital bone, the parietal or side walls of the skull bulge out in an extraordinary manner; the brain case (unlike the Hindoos) is very large, and the limbus extraordinary thick.—Among my Burmese specimens were the mutilated skulls of Burmese soldiers, found near Rangoon, some of which were clove in twain by the prowess of British soldiers.—[From Montgomery Martin's History of the British Colonies.]

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